PROGRAM BOOK

2021 ISOPES Symposium

Date: June 11th-12th, 2021

Venue: Intercontinental Seoul COEX

ISOPES
International Society of Oncoplastic Endocrine Surgeons

HARMONIC®
HD 1000i
Behind the "WOW"

Unmatched precision

with a unique jaw shape that reduces the need to use a separate dedicated dissecting instrument

Unparalleled strength

with a blade design that delivers more secure seals, even in the most challenging conditions

Optimal efficiency

from increased sealing speed, multi-functionality, and simplified steps for use

*Design Validation Study with surgeons (n=33) operating in simulated procedures in an animate porcine laboratory model. #051950-160425
†In a design validation study with surgeons (n=33) operating in simulated procedures in an animate porcine laboratory model (26/33) #053344-160516
‡In a pre-clinical study, for both iliac dissection and lymph node dissection, the HD 1000i was significantly superior to the predicate devices in dissecting capability ($p<0.001$ in all cases). #051950-160425
*In a pre-clinical study, 100% (56/56) of porcine blood vessels remained hemostatic over a 30-day survival period. #049339-160315
†In a benchtop study with 5-7 mm porcine carotid arteries that compared median burst pressure, HARMONIC® HD 1000i (1878 mmHg) vs. competitor product A (1224 mmHg) ($p<0.0001$). #049305-160315.
‡In a benchtop study with 5-7 mm porcine carotid arteries that compared median burst pressure, HARMONIC® HD 1000i (1878 mmHg) vs. competitor product B (1171 mmHg) ($p<0.0001$). #049315-160315
*In a porcine study comparing sealing times of HARMONIC ACE®+7 and HARMONIC® HD 1000i, HARMONIC® HD 1000i Shears transected vessels faster than HARMONIC ACE®+7 (mean vessel transection time of 9.186 vs 15.291). #051753-160420
†In a design validation study with surgeons (n=33) operating in simulated procedures in an animate porcine laboratory model (26/33) #053344-160515
‡Design Validation Study with surgeons (n=33) operating in simulated procedures in an animate porcine laboratory model (33/33) #053346-160516
§Seal reliability at 240 mmHg of 98.2% vs. 98.4% for HARMONIC ACE®+7 MIN button. Speed based on average time to transect 150 mm of porcine jejunum ($p=0.0000$). #050508-160401
||Device measurements based on a metrology study (median cut length of 18.87 mm vs. 14.56 mm). #050283-160329
#Based on average device tip grasping force (distal 5 mm of the jaw). #050295-160329

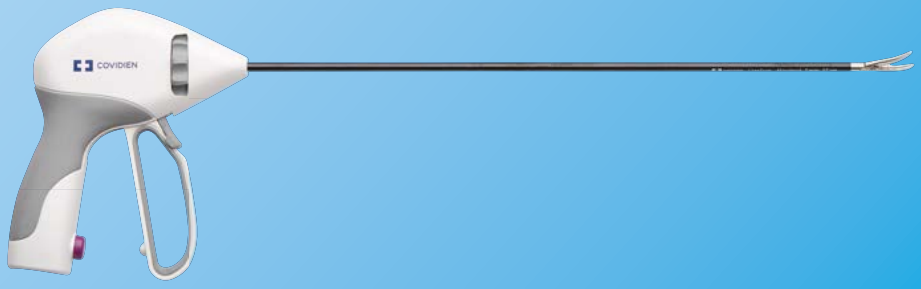
COPY-18008-EN

ETHICON
PART OF THE Johnson & Johnson FAMILY OF COMPANIES

Shaping the future of surgery

LESS STICKING. EASIER CLEANING. GREATER EFFICIENCY.

LigaSure™ Maryland Jaw Device
with Nano-Coated Jaws



The reliable performance of Ligasure vessel-sealing technology,
Now with non stick nano-coating on the jaws

Medtronic
Further, Together

Da Vinci® SP

Moving surgery forward.
Again.

DAVINCI™ by Intuitive

Before performing any clinical procedure utilizing the da Vinci Surgical System, physicians are responsible for receiving sufficient education, training, guidance and supervision offered by Intuitive Surgical, to ensure that they have the skill and the experience necessary to protect the health and safety of the patient. However, Intuitive Surgical only trains on the use of the da Vinci Surgical System, not medical knowledge. For technical information, including full cautions and warnings on using the da Vinci System, please refer to the system user manual. Read all instructions carefully. Failure to follow instructions, notes, cautions, warnings and danger messages may lead to serious injury or complications for the patient.

일회용 의료기기 | 재멸균 금지 | 재사용 금지

세계최초 이온화 콜라겐 유착방지제

CollaBarrier®

Collagen based Anti-Adhesion Gel

품목명	유착방지피복재(3등급)
사용목적	유착방지피복재로서 주로 갑상선 수술 및 자궁강 수술 시 유착 감소
성분	Type I Porcine Atelocollgen
규격	3ml
저장방법	냉장보관(2~8°C)
사용기간	제조일로부터 2년

dalim (주)다림티센
제조원 : (주)다림티센
Tel. 070- 7542-5416

dalim (주)다림양행
판매원 : (주)다림양행
Tel. 02-335-1657

GC 녹십자

NEW

보다 안정된 그립감의 새로운 디자인으로 Upgrade된 Greenplast Q

Good Design 상을 수상한 Greenplast Q New Device는
사용의 편리성을 높인 Gun Type 디자인으로 제작되었습니다

그린플라스트 큐

Pre-filled Syringe Kit

GOOD DESIGN

- Sealing of Tissue
- Hemostasis
- Oozing & Leakage Prevention

- General Surgery and Traumatology
- Cardiovascular and Thoracic Surgery
- Obstetrics and Gynecology Surgery
- Neurosurgery
- Orthopedics Surgery
- E.N.T. Surgery
- Plastic Surgery
- Urology Surgery
- Dental and Maxillofacial Surgery

2021 ISOPES Symposium

International Society of Oncoplastic Endocrine Surgeons

CONTENTS

INVITATION

Dear Colleagues,

It is our great pleasure and honor to extend this warm invitation to you to participate in the 2021 Symposium of the International Society of Oncoplastic Endocrine Surgeons (ISOPES) will be held in Seoul.

As you know, we have been dealing with the unprecedented COVID-19 pandemic that has changed our daily lives. Considering the current situation, the organizing committee decided to hold the ISOPES as a Hybrid meeting (online/ offline) and we will do our best to ensure a seamless connection with you.

2021 Symposium of ISOPES is organized in various fields and themes. This year's symposium offers sessions on topics of interest such as the global perspective and new trends of endocrine surgery. Various approaches such as BABA, Transaxillary, and Transoral thyroidectomy will cover in schedules.

Although the pandemic prevents us from gathering in greater numbers, we have no doubt that fruitful, in-depth discussions will ensue either at the venue or in the on-line setting. We extend our deepest gratitude to the Director and members of the Academic Board for preparing an excellent program that will meet the expectations of all ISOPES colleagues.

We look forward to your interest and proactive participation in the Symposium and hope that our joint efforts will soon bring about an end to the COVID-19 pandemic so that we may once again be free to gather in person.

Jee Soo Kim M.D., Ph.D.

President, International Society of Oncoplastic Endocrine Surgeons

COMMITTEE

Board of Directors

President	**Jee Soo Kim** Korea, Sungkyunkwan University
Immediate Past President	**Amit Agarwal** India, Sanjay Gandhi Post Graduate Institute of Medical Sciences (SGPGIMS)
Honorary President	**Yeo-Kyu Youn** Korea, Thyroid Clinic, St. Peter's Hospital
Secretary General	**Ki Wook Chung** Korea, Ulsan University
Treasurer	**Jun Ho Choe** Korea, Sungkyunkwan University
Board Member	**Jung Han Kim** Korea, Sungkyunkwan University
	Sareh Parangi USA, Massachusetts General Hospital
	Kazuo Shimizu Japan, Nippon Medical School
	Shih-Horng Huang Taiwan, Yuan Ze University
	Enders Ng Hong Kong, The Chinese University of Hong Kong
	Ping Wang China, The Second Affiliated Hospital, Zhejiang University School of Medicine
	Kyu Eun Lee Korea, Seoul National University Academic Committee

Director	**Kyu Eun Lee** Korea, Seoul National University
Deputy Director	**Young Jun Chai** Korea, Seoul National University
Member	**Wan Wook Kim** Korea, Kyungpook National University
	Ra-Yeong Song Korea, Chung-Ang University Hospital
	Sang-Wook Kang Korea, Yonsei University Severance Hospital
	Jun Ho Lee Korea, Sungkyunkwan University Samsung Changwon Hospital

Educational Committee

Director	**June Young Choi** Korea, Seoul National University
Administrative Assistant	**Hyeong Won Yu** Korea, Seoul National University

PROGRAM AT A GLANCE

Day 1 / June 11th (Fri)

09:00–09:05	Opening remark
09:05–10:05	**Session 1: Global perspective of oncoplastic endocrine surgery**
10:05–10:20	*Coffee Break*
10:20–12:00	**Session 2: Procedures, tips, and tricks**
12:00–13:00	*Lunch*
13:00–13:40	**Plenary Lecture**
13:40–15:00	**Session 3: Outcomes and evidence updates of various approaches**
15:00–15:15	*Coffee Break*
15:15–16:55	**Session 4: Advanced oncoplastic surgery**
16:55–17:00	Closing remark

Day 2 / June 12th (Sat)

09:00–12:00	**Session 5: Unedited videos**
12:00–12:50	*Lunch*
12:50–13:30	**Presidential Lecture**
13:30–13:40	*Coffee Break*
13:40–15:00	**Session 6: New trends in endocrine surgery**
15:00–15:15	*Coffee Break*
15:15–16:55	**Session 7: Various approaches for adrenal gland**
16:55–17:00	Closing remark

INVITED SPEAKERS JUNE 11 (FRI)

Session 1. Global perspective of oncoplastic endocrine surgery

Chair

Kyoung Sik Park

Konkuk University
Korea

Chair

Su-jin Kim

Seoul National University
Korea

Jui-Yu Chen

Veterans General Hospital
Taipei, Taiwan

The status of minimally invasive surgery in Taiwan

Edisher Sikharulidze

Aversi Clinic, Tbilisi
Georgia

Initial Experience of Endoscopic Thyroidectomy Using Bilateral Axillary Breast and Transoral Vestibular Approach in Georgia

Ping Wang

Zhejiang University
China

The status of minimally invasive surgery in mainland China

Patrick Aidan

ORL-Chirurgie Robotique Professeur
au Collège de Médecine de Paris
France

Current Status of Robotic thyroid Surgery in Europe- Experience of 1400 procedures at the American Hospital of Paris

INVITED SPEAKERS JUNE 11 (FRI)

Session 2: Procedures, tips, and tricks

Chair

Jun-Ho Choe

Sungkyunkwan University
Korea

Chair

Young Jun Chai

Seoul National University
Korea

Hyeong Won Yu

Seoul National University, Korea
Korea

BABA robotic thyroidectomy

Putthiporn Yenbutra

Rajavithi Hospital Rangsit University
Thailand

Endoscopic thyroidectomy trans-axillary approach

Angkoon Anuwong

Police General Hospital
Thailand

Transoral Endoscopic Thyroidectomy: Tips & Technique

Quan-Yang Duh

University of California, San Francisco
USA

Laparoscopic Adrenalectomy: Transperitoneal Approach

Marcin Barczyński

Jagiellonian University
Poland

Posterior retroperitoneoscopic adrenalectomy

Plenary Lecture

Chair

Jee Soo Kim

Sungkyunkwan University
Korea

Amit Agarwal

Sanjay Gandhi Post Graduate Institute of Medical Sciences
India

My journey of Minimally invasive Endocrine Surgery

INVITED SPEAKERS JUNE 11 (FRI)

Session 3: Outcomes and evidence updates of various approaches

Chair

Kyung Ho Kang

Ewha Womans University
Korea

Chair

Ra-Yeong Song

Chung-Ang University Hospital
Korea

Enrique Mercader

Gregorio Marañon General University Hospital
Spain

Outcomes and evidence updates of various approaches: Bilateral Axillo-Breast Approach (BABA)

Sohee Lee

The Catholic University
Korea

A to Z for MIT beginner : Transaxillary approach

Jun Ho Lee

Sungkyunkwan University
Korea

Thyroid: Transoral approach

Shirley Liu

The Chinese university of Hong Kong
Hong Kong

Radiofrequency ablation for adrenal disease

Session 4: Advanced oncoplastic surgery

Chair

Won Seo Park

Kyung Hee University
Korea

Chair

Sang-Wook Kang

Yonsei University
Korea

Hyunsuk Suh

The Suh Scarless Thyroid Surgery Center
USA

The Initial Experience in the US: Bilateral Axillo-Breast Approach Modified Radical Neck Dissection

Cho Rok Lee

Yonsei University
Korea

Advanced oncoplastic surgery : Transaxillary approach MRND

Insoo Suh

NYU Langone Health
NY, USA

Hybrid transoral thyroidectomy: Submental approach (TOaST)

Jason YK Chan

The Chinese university of Hong Kong
Hong Kong

Robotic single port thyroid surgery

Ji-sup Yun

Sungkyunkwan University
Korea

Single port adrenal surgery

INVITED SPEAKERS JUNE 12 (SAT)

Session 5: Unedited videos

Chair

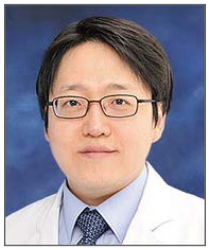
Kyu Eun Lee

Seoul National University
Korea

Chair

Ja Seong Bae

The Catholic University
Korea



June Young Choi

Seoul National University
Korea

BABA robotic thyroidectomy

Tae-yon Sung

Ulsan University
Korea

Robotic Transaxillary Thyroidectomy

Seok-Mo Kim

Yonsei University
Korea

Thyroid: Transoral approach

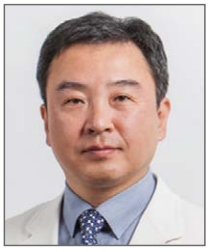
INVITED SPEAKERS JUNE 12 (SAT)

Presidential Lecture

Chair

Ki Wook Chung

Ulsan University
Korea



Jee Soo Kim

Sungkyunkwan University
Korea

Sharing Ideas in Oncoplastic Thyroid Surgery

INVITED SPEAKERS JUNE 12 (SAT)

Session 6: New trends in endocrine surgery

Chair

June Young Choi

Seoul National University
Korea

Chair

Do Hoon Koo

Inje University
Korea

Akira Miyauchi

Kuma Hospital
Japan

Active surveillance for
papillary microcarcinoma

Murat özdemir

Ege University Hospital
Turkey

New trends in intraoperative neuromonitoring

Wan Wook Kim

Kyungpook National University
Korea

Intraoperative parathyroid glands identification
and viability assessment

Raymon Grogan

Baylor College of Medicine
USA

Transoral parathyroid surgery

INVITED SPEAKERS JUNE 12 (SAT)

Session 7: Various approaches for adrenal gland

Chair

Jung Han Kim

Sungkyunkwan University
Korea

Chair

Tae-yon Sung

Ulsan University
Korea

Young Jun Chai

Seoul National University
Korea

Which is better? LTA vs PRA

Tobias Carling

Carling Adrenal Center
USA

Various types of adrenal surgery and how to choose one

Matrix Fung

The University of Hong Kong
Hong Kong

Management of bilateral pheochromocytoma in MEN2A syndrome

Yu-Mi Lee

Ulsan University
Korea

Laparoscopic vs. robotic adrenalectomy

Sang-Wook Kang

Yonsei University
Korea

Retroperitoneal approach for paraganglioma

2021 ISOPES Symposium

International Society of Oncoplastic Endocrine Surgeons

DAILY PROGRAM

JUNE 11 (FRI)

JUNE 12 (SAT)

DAILY PROGRAM JUNE 11 (FRI)

09:00–09:05	Opening remark	**Jee Soo Kim** President, Sungkyunkwan University, Korea

Session 1: Global perspective of oncoplastic endocrine surgery

Chair **Kyoung Sik Park** Konkuk University, Korea / **Su-jin Kim** Seoul National University, Korea

09:05 - 09:20	**The status of minimally invasive surgery in Taiwan**	**Jui-Yu Chen** Taipei Veterans General Hospital, Taipei, Taiwan
09:20 - 09:35	**Initial Experience of Endoscopic Thyroidectomy Using Bilateral Axillary Breast and Transoral Vestibular Approach in Georgia**	**Edisher Sikharulidze** Aversi Clinic, Tbilisi, Georgia
09:35 - 09:50	**The status of minimally invasive surgery in mainland China**	**Ping Wang** Zhejiang University, China
09:50 - 10:05	**Current Status of Robotic thyroid Surgery in Europe-Experience of 1400 procedures at the American Hospital of Paris**	**Patrick Aidan** ORL-Chirurgie Robotique Professeur au Collège de Médecine de Paris, France
10:05 - 10:20	*Coffee Break*	

Session 2: Procedures, tips, and tricks

Chair **Jun-Ho Choe** Sungkyunkwan University, Korea / **Young Jun Chai** Seoul National University, Korea

10:20 - 10:40	**BABA robotic thyroidectomy**	**Hyeong Won Yu** Seoul National University, Korea
10:40 - 11:00	**Endoscopic thyroidectomy trans-axillary approach**	**Putthiporn Yenbutra** Rajavithi Hospital Rangsit University, Thailand
11:00 - 11:20	**Transoral Endoscopic Thyroidectomy: Tips & Technique**	**Angkoon Anuwong** Police General Hospital, Thailand
11:20 - 11:40	**Laparoscopic adrenalectomy:Transperitoneal approach**	**Quan-Yang Duh** University of California, San Francisco, USA
11:40 - 12:00	**Posterior retroperitoneoscopic adrenalectomy**	**Marcin Barczyński** Jagiellonian University, Poland
12:00 - 13:00	*Lunch*	

Plenary Lecture

Chair **Jee Soo Kim** President, Sungkyunkwan University, Korea

13:00 - 13:40	**My journey of minimally invasive endocrine surgery**	**Amit Agarwal** Sanjay Gandhi Post Graduate Institute of Medical Sciences, India

Session 3: Outcomes and evidence updates of various approaches

Chair **Kyung Ho Kang** Ewha Womans University, Korea / **Ra-Yeong Song** Chung-Ang University Hospital, Korea

13:40 - 14:00	**Outcomes and evidence updates of various approaches: Bilateral Axillo-Breast Approach (BABA)**	**Enrique Mercader** Gregorio Marañon General University Hospital, Spain
14:00 - 14:20	**A to Z for MIT beginner : Transaxillary approach**	**Sohee Lee** The Catholic University, Korea
14:20 - 14:40	**Thyroid: Transoral approach**	**Jun Ho Lee** Sungkyunkwan University, Korea
14:40 - 15:00	**Radiofrequency ablation for adrenal disease**	**Shirley Liu** The Chinese university of Hong Kong, Hong Kong
15:00 - 15:15	*Coffee Break*	

Session 4: Advanced oncoplastic surgery

Chair **Won Seo Park** Kyung Hee University, Korea / **Sang-Wook Kang** Yonsei University, Korea

15:15 - 15:35	**The Initial Experience in the US: Bilateral Axillo-Breast Approach Modified Radical Neck Dissection**	**Hyunsuk Suh** The Suh Scarless Thyroid Surgery Center, USA
15:35 - 15:55	**Advanced oncoplastic surgery: Transaxillary approach MRND**	**Cho Rok Lee** Yonsei University, Korea
15:55 - 16:15	**Hybrid transoral thyroidectomy: Submental approach (TOaST)**	**Insoo Suh** NYU Langone Health, NY, USA
16:15 - 16:35	**Robotic single port thyroid surgery**	**Jason YK Chan** The Chinese university of Hong Kong, Hong Kong
16:35 - 16:55	**Single port adrenal surgery**	**Ji-sup Youn** Sungkyunkwan University, Korea
16:55 - 17:00	**Closing remark**	

DAILY PROGRAM JUNE 12 (SAT)

Session 5: Unedited videos

Chair **Kyu Eun Lee** Seoul National University, Korea / **Ja Seong Bae** The Catholic University, Korea

09:00 - 10:00	**BABA robotic thyroidectomy**	**June Young Choi** Seoul National University, Korea
10:00 - 11:00	**Robotic transaxillary thyroidectomy**	**Tae-yon Sung** Ulsan University, Korea
11:00 - 12:00	**Thyroid: Transoral approach**	**Seok-Mo Kim** Yonsei University, Korea
12:00 - 12:50	*Lunch*	

Presidential Lecture

Chair **Ki Wook Chung** Ulsan University, Korea

12:50 - 13:30	**Sharing ideas in oncoplastic thyroid surgery**	**Jee Soo Kim** President, Sungkyunkwan University, Korea
13:30 - 13:40	*Coffee Break*	

Session 6: New trends in endocrine surgery

Chair **June Young Choi** Seoul National University, Korea / **Do Hoon Koo** Inje University, Korea

13:40 - 14:00	**Active surveillance for papillary microcarcinoma**	**Akira Miyauchi** Kuma Hospital, Japan
14:00 - 14:20	**New trends in intraoperative neuromonitoring**	**Murat Özdemir** Ege University Hopistal, Turkey
14:20 - 14:40	**Intraoperative parathyroid identification and viability assessment**	**Wan Wook Kim** Kyungpook National University, Korea
14:40 - 15:00	**Transoral parathyroid surgery**	**Raymon Grogan** Baylor College of Medicine, USA
15:00 - 15:15	*Coffee Break*	

Session 7: Various approaches for adrenal gland

Chair **Jung Han Kim** Sungkyunkwan University, Korea / **Tae-yon Sung** Ulsan University, Korea

15:15 - 15:35	**Which is better? LTA vs. PRA**	**Young Jun Chai** Seoul National University, Korea
15:35 - 15:55	**Various types of adrenal surgery and how to choose one**	**Tobias Carling** Carling Adrenal Center, USA
15:55 - 16:15	**Management of bilateral pheochromocytoma in MEN2A patients**	**Matrix Fung** The University of Hong Kong, Hong Kong
16:15 - 16:35	**Which is better laparoscopic vs. Robotic adrenalectomy**	**Yu-Mi Lee** Ulsan University, Korea
16:35 - 16:55	**Retroperitoneal approach for paraganglioma**	**Sang-Wook Kang** Yonsei University, Korea
16:55 - 17:00	**Closing remark**	**Jee Soo Kim** President, Sungkyunkwan University, Korea

2021 ISOPES Symposium

International Society of Oncoplastic Endocrine Surgeons

June 11 (Fri)

Session 1

Global Perspective Of Oncoplastic Endocrine Surgery

Chair

Kyoung Sik Park
Konkuk University, Korea

Su-jin Kim
Seoul National University, Korea

CURRICULUM VITAE

Jui-Yu Chen
Veterans General Hospital
Taipei, Taiwan

EDUCATION

1990 – 1997	Bachelor of Medicine (MB), Department of Medicine, School of Medicine, Taipei Medical University, Taipei, Taiwan, R.O.C.
2010 – 2020	Doctor of Philosophy (PhD), Institute of Pharmacology, School of Medicine, National Yang Ming Chiao Tung University, Taipei, Taiwan, R.O.C.

CAREER

2009	Research fellowship, Division of Endocrine Surgery, Department of Surgery, Columbia university medical Center, NY, USA
2008	Research fellowship, Division of Endocrine Surgery, Department of Surgery, University of Wisconsin–Madison Hospital, Wisconsin, USA
2006	Deputy Secretary–General, Taiwan Association of Endocrine Surgeons, Taiwan, R.O.C.
2004 –	Attending physician, Section of General Surgery, Endocrine Surgery, Department of Surgery, Chief of Thyroid Medical Center, Taipei Veterans General Hospital, Taiwan, R.O.C.
2014 –	Council member of Taiwan Association of Endocrine Surgeons, Taiwan, R.O.C.

Session 1
Global Perspective Of Oncoplastic Endocrine Surgery

The status of minimally invasive surgery in Taiwan

After the first endoscopic neck surgery was performed in 1996 for the hyperparathyroidism patient, there are many different procedures that have been evolved to minimize surgical morbidity and neck scarring to remove thyroid or parathyroid tumors. Minimally invasive and remote access neck surgical methods using endoscopy or surgical robots has been utilized popularly in endocrine surgery. The remote access procedures has been developed over twenty years. They can be approached via cervical, anterior chest, breast, post-auricular or transoral routes.

The most significant complications of conventional thyroidectomy are recurrent laryngeal nerve injury and hypoparathyroidism. Additionally, there are some special concerns occurring in minimal invasive surgeries. The limitation of tumor size, seroma formation, possible deep neck infection, brachial plexus injury, mental nerve injury, the compression damage to marginal branch of the facial nerve, and the incidence of Co2 embolism should be noticed in respective surgical procedures.

The presentation will briefly introduce the status of minimally invasive surgery over the field of oncoplastic endocrine surgery in Taiwan. Special concerns and relevant experiences will be also included.

CURRICULUM VITAE

Edisher Sikharulidze
Aversi Clinic, Tbilisi
Georgia

EDUCATION

• 1978 – 1988	Batumi 22nd school
• 1990 – 1996	Yaroslavl State Medical Academy, Russia.
• 1997 – 1999	Clinical Residency in general surgery, Yaroslavl state medical academy. Russia
• 2004 –	Fellowship at Moscow Laser medicine research center. Russia
• 2002 –	Scientific paper to acquire the title of candidate for becoming a doctor of medicine
• 2006 –	Academic Doctor of Medicine

CAREER

• 1999 –	Chief Laborant (resident) at General Surgery in Yaroslavl State Medical Academy, Russia
• 2002 –	Assistant professor at Yaroslavl State Medical Academy, Russia
• 2004 –	Professor N. Kipshidze Central university clinic, Tbilisi Endocrine Surgeon. Georgia.
• 2006 – 2009	Gori Military Hospital, Endocrine surgeon, Georgia
• 2008 –	Chief of endocrine surgery department, Aversi clinic, Tbilisi, Georgia
• 2015 –	First university clinic of Tbilisi state medical university, Endocrine surgeon, Georgia
• 2017 –	Georgian ministry of Labor and Health, Expert of the field
• 2017 –	The President of The Georgian Association of Endocrine Surgeons.

Session 1
Global Perspective Of Oncoplastic Endocrine Surgery

Initial Experience of Endoscopic Thyroidectomy Using Bilateral Axillary Breast and Transoral Vestibular Approach in Georgia

Purpose: Remote access thyroid surgery using a bilateral axillary breast approach (BABA) or a transoral endoscopic thyroidectomy vestibular approach (TOETVA) are increasingly performed worldwide. In the Caucasus, these methods were first applied in the Republic of Georgia. This study compares these two methods of endoscopic thyroid surgery performed on patients in a tertiary hospital in Tbilisi, Georgia.

Methods: Between December 2015 and January 2018, 41 patients underwent endoscopic thyroid surgery at the Aversi Clinic, including 32 who underwent BABA endoscopic thyroidectomy for benign nodules and nine who underwent TOETVA for thyroid cancers. Patients' medical records were retrospectively reviewed.

Results: Tumors were significantly larger (2.38±0.38 cm versus 1.70±0.31 cm, p value <0.001), operation time was significantly longer (177.66±21.02 min versus 116.66±5.59 min, p value <0.001), and blood loss was significantly greater (149.07±28.10 ml versus 102.22±8.33 ml, p value <0.001) in patients who underwent BABA than TOETVA. There were no significant differences in postoperative complications between the two groups.

Conclusion: Remote access thyroid surgery, either BABA or TOETVA, was successfully started, without harmful complications, at the Aversi Clinic in Tbilisi, Georgia. BABA is suitable for large sized

benign nodules and TOETVA for thyroid cancers with central lymph node dissection.

CURRICULUM VITAE

Ping Wang
Zhejiang University
China

ACADEMIC EMPLOYMENT

Vice-president & Secretary-general of Chinese Thyroid Association (CTA)
Vice-president of Head & Neck Tumor of Zhejiang Anti-cancer Association
President of Thyroid Society of Zhejiang Doctor Association
President of Chinese Society of Oncoplastic Endocrine Surgeons (CSOPES)
Leader of Chinese Endoscopic Thyroid Surgery Study Group (CETSSG)
Leader of endoscopic thyroid surgeon union
Board member of International Society of Oncoplastic Endocrine Surgeons (ISOPES)
Honor Member of Hong Kong thyroid society

Dr. Ping Wang, graduated from Zhejiang Medical University in 1988, started general surgical career since then is the chief surgeon of Second Affiliated Hospital of Zhejiang University School of Medicine (SAHZU) in General Surgery Department. From 1998, he focused the main attention on the thyroid and parathyroid lesions. In 2006, he developed the thyroid operation via endoscopic thyroidectomy. In the recent years, he has finished 400~600 cases of thyroid operations per year at SAHZU. By now, he has finished more than 4,000 cases of Scarless (in the neck) Endoscopy Thyroidectomy, which include over 1000 cases of thyroid cancer. He has also finished more than 100 cases of robot-assisted thyroid surgery. He has been invited as a faculty member to numerous national and international congresses for delivering lectures and performing live demonstration.

Session 1
Global Perspective Of Oncoplastic Endocrine Surgery

The status of minimally invasive surgery in mainland China

Endoscopic thyroid surgery (ETS) was first performed by a general surgeon in 2001. Nowadays, ETS, especially SET(Scarless in the Neck Endoscopic Thyroidectomy), has been accepted by many surgeons, including ENT doctors and oncology surgeons, through 20 years of clinical exploration and practice.

According to the latest survey results, multiple approaches have been practiced in many different centers. Breast approach is regarded as the most common approach and its cosmetic result is perfect. As for lateral neck dissection, a modified breast areola approach is highly recommended.

Transoral endoscopic thyroidectomy vestibular approach (TOET-VA), belonging to NOTES, is the second choice. It can dissect the low lymph nodes easily in level six. Breast combined with Oral was selected for lateral neck dissection in some centers. Although this technique combines the advantages of the breast and oral approach, I think this is not worth it for patients. The third selection is axillary, which has recently been widely promoted.

How about robot-assisted thyroidectomy (RAT)? The most common approach of RAT is BABA, followed by axillary and trans-oral approaches. By this April, 43 centers have performed RAT, with a total number of 6046. 12 with more than 100 cases, and 2 with more than 1,000 cases. Due to the high cost of RAT, which is no covered by the

insurance, RAT is difficult to carry out routine practice in mainland China.

There are three Chinese expert consensuses of ETS. 1. Focus on RAT, founded in 2016. 2. Focus on SET of Breast approach, founded in 2017. 3. Focus on SET of trans-oral approach, founded in 2018.

A Chinese guideline for protecting parathyroid and the Chinese consensus of IONM were recommended in ETS as well. Nano-carbon is used for parathyroid protection. Thyroid glands and lymph nodes will be stained black, while parathyroid won't. Multi-function forceps (longer probe) was routinely used in ETS.

Some new technology and material are used in SET. For example, an optical dissector could be used to building working space and bipolar was applied to preserve parathyroid glands easily.

SET is not routinely used for benign patients but patients who care about the scar. As for PTC, it's still debatable. And now, oral approach is accepted by most thyroid surgeons. Lateral neck dissection has been routinely performed in many centers.

Two famous organizations, Chinese Society of Oncoplastic Endocrine Surgeons (CSOPES), and Chinese Endoscopic Thyroid Surgery Study Group (CETSSG) are responsible for the training and continuous education of endoscopic thyroid surgeons. It provides standardized training, including model training, animal training, video show, and live demonstration. Of course, there are many other training programs, like the clinical advanced training program in Medtronic innovation centers in Shanghai and the Aesculap Academy mentorship Program in Suzhou.

We are devoted to making efforts to jointly carry out multi-center research about minimally invasive surgery.

As a conclusion, breast approach is the first choice and TOETVA is a real scarless operation. SET is suggested to be performed on patients who care about the scar. RAT still has some limitations. Keep in mind that oncological safety is always the highest priority; conversion

to open surgery is to ensure operative safety and effectiveness, which doesn't mean operation failure.

CURRICULUM VITAE

Patrick Aidan

ORL-Chirurgie Robotique Professeur
au Collège de Médecine de Paris
France

- Head of Otolaryngology and Head and Neck Department. American Hospital of Paris. France.
- Course Director of Robotic Thyroid Surgery program at European School of Surgery in Paris. France.
- Proctor of Robotic Thyroid Surgery. Intuitive Surgical USA. DaVinci System.
- Scientific Director of Masterclass of Robotic Thyroid Surgery. American Hospital of Paris. France.
- Course Director : Robotic Thyroid surgery. IRCAD. Strasbourg. France.
- Associated Professor at French College Hospital of Paris.

Session 1
Global Perspective Of Oncoplastic Endocrine Surgery

Current Status of Robotic thyroid Surgery in Europe- Experience of 1400 procedures at the American Hospital of Paris

Introduction

Thyroid surgery is in a state of evolution from traditional open approaches to novel robotic techniques. The transaxillary robotic surgery (TARS) of thyroid is effective in the management of thyroid cancer. Complications are no higher than open or endoscopic techniques. TARS also avoid the anterior neck scar. This communication presents what the authors believe to be the largest cohort of patients reported in Europe undergoing robotic thyroid surgery with the aim of defining the indications for this procedure.

Methods

One thousand and forty hundred patients underwent TARS of thyroid were enrolled in this study between March 2010 and June 2021. All patients were operated by one surgeon at one clinical center. Data reviewed included patient characteristics, pathological characteristics, extend of surgery and post operative complications. The mean follow up was 74.29 month.

Materiel

1380 patients underwent 1409 procedures; the average age of the patients was 43 years and male to female ratio of 1:22. Surgeries were 528 lobectomies, 22 subtotal thyroidectomies, 859 total thyroidectomies.

Conclusion

TARS of thyroid has been shown to be efficient in the management of thyroid cancer. This technique is also suitable for benign diseases, including goiters and Grave's disease. Careful patient selection, in terms of patient characteristics and anatomical aspects of the lesion, is fundamental to achieve safe and successful surgeries. The excellent cosmetic results of this procedure make it ideal for patients who have aesthetic concerns and abnormal wound healing.

2021 ISOPES Symposium

International Society of Oncoplastic Endocrine Surgeons

June 11 (Fri)

Session 2

Procedures, tips, and tricks

Chair

Jun-Ho Choe
Sungkyunkwan University, Korea

Young Jun Chai
Seoul National University, Korea

CURRICULUM VITAE

Hyeong Won Yu
Seoul National University
Korea

EDUCATION & TRAINING

2005 – 2009	Master of Science in Medicine, Chungbuk National University College of Medicine, Korea
2009 – 2010	Internship, Hallym University Medical Center, Korea
2010 – 2013	Resident, Department of Surgery, Seoul National University Hospital, Korea
2013 – 2021	Doctor of Philosophy in Medicine, Chungbuk National University College of Medicine, Korea
2014 – 2016	Clinical Fellow, Department of Surgery, Seoul National University Hospital, Korea

ACADEMIC APPOINTMENTS

2016 – 2019	Clinical Instructor, Department of Surgery, Seoul National University Bundang Hospital, Korea
2019 –	Associate professor, Department of Surgery, Seoul National University Bundang Hospital, Korea

Session 2
Procedures, tips, and tricks

BABA robotic thyroidectomy

Bilateral axillo-breast approach (BABA) robotic thyroidectomy started in 2008 and has accumulated thousands of surgical experiences to date. BABA robotic thyroidectomy first started with benign thyroid nodules and small well differentiated thyroid cancer, but as the experience of surgery was accumulated, the indication for BABA surgery gradually expanded. Currently, BABA robotic surgery can operate on all benign diseases such as thyroglossal duct cyst, large goiter, and graves' disease.

To perform BABA robotic thyroidectomy, it is necessary to know the essential surgical procedure. The surgical procedure is as follows. (1) Complete elevation of the flap, (2) Midline division and isthmectomy, (3) Lateral dissection, (4) Dissection of the inferior pole, (5) Preservation of the RLN, (6) Dissection of the ligament of Berry, (7) Dissection of the superior pole, (8) Specimen removal.

This lecture introduces the surgical procedure of BABA robotic thyroidectomy and summarizes surgical tips that may be helpful during surgery.

CURRICULUM VITAE

Putthiporn Yenbutra
Rajavithi Hospital Rangsit University
Thailand

EDUCATION

1997 – 2003	Faculty of Medicine Siriraj Hospital, Mahidol University,Thailand
Doctor of Medicine	
2005 – 2009	Residency training in General Surgery, Rajavithi Hospital, Bangkok, Thailand
Diploma Thai Board of Surgery	
2011 – 2012	Clinical Fellow in Head–Neck and Breast Surgery, Faculty of Medicine Siriraj Hospital ,Mahidol University, Thailand
Certificate in Head–Neck and Breast Surgery	
2014 –	Instructor Course of Advanced Trauma Life Support (ATLS)
2017 –	นักบริหารเชิงยุทธศาสตร์และการเปลี่ยนแปลงโรงพยาบาลราชวิถี กรมการแพทย์ (SRJ02)
2018 –	Transformative Leadership Program, Department of Medical Service, Ministry of Public health

PROFESSIONAL EXPERIENCE

2003 – 2004	General Practitioner (Internship), Kalasin Hospital, Kalasin Province, Thailand
2004 – 2005	General Practitioner (Acting Director), Tha khantho Hospital, Kalasin Province, Thailand
2009 – 2011	Department of Surgery, Damnoensaduak Hospital, Damnoensaduak District, Ratchaburi Province, Thailand
2012 –	Department of Surgery, Rajavithi Hospital, Bangkok, Thailand College of Medicine , Rangsit University
2014 –	Treasurer of Thai Endocrine Surgeons Society (TESS)

Session 2
Procedures, tips, and tricks

Endoscopic thyroidectomy trans-axillary approach

Even though trans-axillary endoscopic thyroidectomy is the first technique of remote assess thyroidectomy. However, this is still a safe and popular technique around the world. In Thailand, Prof. Suchart Chantawibul from Rajavithi hospital is the first surgeon who perform this technique successfully with very low complications. Moreover, he makes an inspiration to other thyroid surgeon in Thailand to perform and develop other techniques of remote assess thyroid surgery.

For our trans-axillary endoscopic thyroidectomy , the patient was set in the supine position with neck extension. Her/his arm was raised over the patient's head and fixed until the operation was finished. We employed a 4-port technique within the axillary area. A 3cm incision was made at the axillary skin crease to create a tunnel above the pectoralis muscle to cross the clavicle until the sternocleidomastoid muscle was reached. A 10mm flexible or rigid laparoscope was inserted in this port, after which the residual wound was sutured with nylon 2-0 to close the space (these sutures was removed after the operation was finished and the wound was closed with absorbable material). Two 5mm incisions were created at the right and left sides of the laparoscope port to insert an ultrasonic device and a grasper. The final 5mm incision was performed at the lateral part of the laparoscope port to insert suction which was used not only for cleaning the operative field also for retracting the sternocleidomastoid muscle laterally in order

to easily identify the thyroid gland. CO2 insufflation pressure was set at 6 mmHg. First, the anterior border of the sternocleidomastoid muscle was dissected laterally to identify the strap muscle which was then split at the lateral part to reach the thyroid gland. Subsequently, we divided the superior and inferior poles of the thyroid gland using an ultrasonic device without suturing or ligation, and then the gland was raised up (medially) to identify and preserve the recurrent laryngeal nerve and parathyroid glands in all cases. After that, ishmusectomy was performed in the last step. Finally, the thyroid gland was removed via the 3 cm incision. Neither the split strap muscle nor the sternocleidomastoid muscle required suturing, and a drain was not employed in any cases. The complications such as recurrent laryngeal nerve injury, hypoparathyroidism or wound hematoma is very low. Moreover, the patients' scar satisfaction is very high in our series.

CURRICULUM VITAE

Angkoon Anuwong
Police General Hospital
Thailand

EDUCATION

1998 – 2004	Faculty of Medicine, Chiangmai University, Chiangmai, Thailand
2007 – 2011	Residency training in General Surgery, Rajavithi Hospital, Bangkok, Thailand
2012	Clinical Fellow in Minimally Invasive Surgery, Rajavithi Hospital, Bangkok, Thailand
2012	International Fellowship of Robotic and Laparoscopic colorectal surgery, Korea University Anam Hospital, Seoul, South Korea
2013	International Fellow, Bariatric, Metabolic & Minimally Invasive Surgery Training Program, University of Minnesota, Minneapolis, Minnesota, USA
2014	Visiting Fellow, Endoscopic Thyroidectomy Training Program, The First Affiliated Hospital of Jinan University, Guangzhou, China

PROFESSIONAL EXPERIENCE

2004 – 2005	General Practitioner (Internship), Lampang Hospital, Lampang, Thailand
2005 – 2007	General Practitioner (Acting Director), Maeprik Hospital, Lampang, Thailand
2013	Department of Surgery, Rajavithi Hospital, Rangsit University, Bangkok, Thailand
2013 –	Minimally Invasive Surgery Division, Department of Surgery, Police General Hospital, Bangkok, Thailand
2016	Visiting Professor of Endocrine Surgery, Department of Surgery, Yale University School of Medicine, Connecticut, USA
2017	Visiting Professor of Endocrine Surgery, Department of Surgery, Mount Sinai Beth Israel, Icahn School of Medicine, New York, USA Visiting Professor of Endocrine Surgery, Department of Surgery, University of California, San–Francisco (UCSF), USA

Session 2
Procedures, tips, and tricks

Transoral Endoscopic Thyroidectomy: Tips & Technique

Since the laparoscopic surgery was adopted almost 3 decades, the paradigm was shift into minimally invasive surgery with less or no scar. This method was also adopted into thyroid surgery as well. Recently, transoral endoscopic thyroidectomy was invented almost 10 years ago, with no skin scar at all. The results were quite good in experienced hands. The technique of transoral endoscopic thyroidectomy can be divided into sublingual approach (which was abandoned due to complications), and oral vestibular approach. On the other hands, the technique can also be divided to be gas and gasless technique. The CO2 is insufflated in to the pseudo-space between Platysma muscle and Straps muscle. Care must be taken not to use the pressure more than 6 mmHg and Flow 20-30 L/min. The common complication of this gas technique is subcutaneous emphysema which can be prevented, not to use over flow and pressure and keep into the right plan. By the way, this subcutaneous emphysema is not a serious complication and will be resolved spontaneously within 24 hours by exhalation.

The transoral endoscopic thyroidectomy vestibular approach (TOETVA) was also adopted into parathyroid surgery as well (parathyroid adenoma and renal hyperparathyroidism). Also, TOETVA can be performed in papillarymicro carcinoma of thyroid. The Central Lymph Node dissection can be done easily. However, lateral neck dissection is still challenging with this method.

CURRICULUM VITAE

Quan-Yang Duh

University of California, San Francisco
USA

Dr. Quan–Yang Duh is Professor of Surgery and Chief of Section of Endocrine Surgery at the University of California, San Francisco (UCSF) and Attending Surgeon at the Veterans Affairs Medical Center, San Francisco. Dr. Duh obtained Bachelor of Science in Molecular Biophysics and Biochemistry from Yale University and MD from UCSF. He trained in General Surgery and Endocrine Surgery at UCSF. As an endocrine surgeon, Dr. Duh specializes in surgery for tumors of the thyroid, parathyroid and adrenal glands, as well as endocrine pancreas and gastrointestinal tumors. Dr. Duh is Past President of the American Association of Endocrine Surgeons (AAES) and was a recipient of the AAES Oliver Cope Meritorious Achievement Award. Dr. Duh is a Past President of the Pacific Coast Surgical Association (PCSA) and the First Vice Present Elect of the American College of Surgeons (ACS). Dr. Duh was the American Thyroid Association (ATA) Paul Starr Award Lecturer in 2017. He has published more than 400 papers and co–edited three textbooks on endocrine surgery. Dr. Duh is on the editorial board of Thyroid, JAMA–Surgery, Video Endocrinology and others.

Session 2
Procedures, tips, and tricks

Laparoscopic adrenalectomy: Transperitoneal approach

Technique of transperitoneal laparoscopic adrenalectomy

"Open the book"

The dissection opens the avascular plane in front of the kidney and the adrenal gland. The "open book" approach separate the "back pages" of the book that contain the kidney and the adrenal from the "front pages" of the book, which is the liver on the right side or the spleen and tail of the pancreas on the left side. The lateral decubitus position of the patient allows gravity to help retracting the "front pages" of the book to open the space of dissection widely. On the right side the triangular ligament is dissected, and the vena cava is exposed. On the left side the fundus of the stomach should visible and the splenic artery and vein behind the pancreas are seen and avoided.

Focused on the "spine of the book" and take down the three arterial "hinges" from the top down

The spine of the book is where the adrenal arteries and veins are located. Understanding the vascular anatomy allows for a relatively bloodless and precise dissection. There are three groups of adrenal arteries that attach to the adrenal gland medially. These are like the hinges that hold the door to the doorframe. Each hinge is taken sequentially, usually from the top down. The superior adrenal arteries

come from the inferior phrenic artery. The middle adrenal arteries come directly from the aorta. The inferior phrenic arteries, usually the largest and the main arterial supply, come from the renal arteries. The superior and middle arteries can be easily taken with hook cautery. During ligation the inferior artery avoid injuring the superior branches of the renal artery to prevent postoperative renal ischemia and hypertension.

Adrenal veins and variations

The adrenal gland is usually drained by a single adrenal vein. The right adrenal vein drains into the vena cava. The left adrenal vein is joined by the inferior phrenic vein, then drains into the left renal vein. Variation in venous anatomy is common, more on the right side and especially more common for larger tumors and for pheochromocytomas. The right adrenal vein can be multiple and can drain as high as into the right hepatic vein and as low as the right renal vein. The adrenal vein is ligated, usually with clips, after sufficient space is developed between the adrenal gland and surrounding tissues. On the right side this space is opened usually after taking the superior artery. On the left side, the space is developed after ligating the superior adrenal artery and the inferior phrenic vein. The middle and lower adrenal arteries are usually behind the veins. Understanding the venous anatomy is the best way to prevent bleeding.

Renal hilum and inferior adrenal artery

Once the adrenal vein is taken the adrenal gland is retracted away from the renal hilum, to put tension on the inferior adrenal artery (the lowest “hinge”), pulling it away from upper renal artery branches and to provide better view of the lower limb of the adrenal gland that can reach far down into the renal hilum. Once the inferior adrenal artery is taken the gland can be easily detached from the upper medial bor-

der of the kidney, usually with a laparoscopic vessel sealing device.

Don't breach the capsule and avoid seeding the tumor

While dissecting, take the tumor with the adrenal gland and include periadrenal fatty tissues. Treat each tumor as if it can be malignant and avoid breaching the tumor capsule that can lead to recurrence or regrowth. Dissect wide (not just on the adrenal capsule) to avoid breaching the capsule, except at the lower limb of the adrenal (the flat "pancake" portion) where it reaches into the renal hilum. Place the specimen in a strong nylon bag for extraction. Fragmenting the tumor for removal should only be done in the bag and only with prior agreement from the pathologist.

CURRICULUM VITAE

Marcin Barczyński
Jagiellonian University
Poland

Dr. Marcin Barczyński was trained in Poland, Germany and USA and has more than 20 years of experience in general surgery, endocrine surgery, and surgical oncology. He is a Full Professor of Surgery at the Jagiellonian University, Medical College, Department of Endocrine Surgery in Kraków, Poland. Dr. Barczyński has a busy thyroid, parathyroid and adrenal surgical practice, seeing patients and operating patients both in public and private sector. Dr. Barczyński currently serves as President-Elect of the European Society of Endocrine Surgeons (ESES), Chairman of the EUROCRINE Society, a member of the Steering Committee of the International Neural Monitoring Study Group (INMSG) for Thyroid and Parathyroid Surgery, and Secretary of the UEMS Division of Endocrine Surgery of the European Board of Surgery. Dr. Barczyński is an active member of numerous scientific societies, including the European Surgical Association (ESA), European Thyroid Association (ETA), International Association of Endocrine Surgeons (IAES), and American Association of Endocrine Surgeons (AAES). Dr. Barczyński is the author of more than 200 peer-reviewed publications and book chapters, and he serves on many editorial boards. His citation index is equal to 3600, and h-index is 33. His work in improving surgical outcomes, nerve monitoring and exploring novel treatment techniques for thyroid, parathyroid, and adrenal diseases has helped the medical field tailor and personalize treatment for patients with these conditions.

Session 2
Procedures, tips, and tricks

Posterior retroperitoneoscopic adrenalectomy

Posterior retroperitoneoscopic adrenalectomy (PRA) is a minimally invasive procedure in which adrenal gland masses are removed through small incisions in the back while patient lies during the operation in a prone position. This approach mastered by Martin Walz has gained international popularity in the past decade. In clinical studies, PRA was found to have superior outcomes versus the traditional laparoscopic transperitoneal procedure through the abdomen. Advantages of this approach include: less time in the operating room, less blood loss during surgery, significantly less scarring, reducing the risk of surgical access site herniation, less post-operative pain, faster recovery and return to normal activities, and a shorter hospital stay. Importantly, PRA was found to be equally safe when compared with a traditional transabdominal laparoscopic adrenalectomy. PRA is also especially helpful where tumors are present in both adrenal glands, observed in 10% of patients, and in patients who previously had extensive abdominal surgery. Despite major advantages, many surgeons still prefer laparoscopic transperitoneal adrenalectomy. It is likely that the unfamiliar anatomical environment, smaller working space and concern about the long learning curve impede implementation. However, as shown by data from multicenter study, in specialized endocrine surgical centers between 24 and 42 procedures are required to fulfil the entire surgical learning curve for the PRA. To improve

further cosmetic outcomes PRA can be also performed as a single-access operation which has been demonstrated to be a viable alternative to conventional three-port PRA technique in selected patients. Moreover, technique of a single-port robot-assisted PRA was described recently. Although single-port robot-assisted PRA appears to be safe and feasible, further experience and research is required to optimize patient selection criteria and verify its advantages over the traditional three-incision PRA technique.

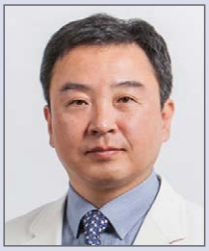
2021 ISOPES Symposium

International Society of Oncoplastic Endocrine Surgeons

June 11 (Fri)

Plenary Lecture

Chair



Jee Soo Kim
President, Sungkyunkwan University, Korea

CURRICULUM VITAE

Amit Agarwal

Sanjay Gandhi Post Graduate Institute of Medical Sciences
India

Dr. AMIT AGARWAL is working as a Professor in the department of Endocrine Surgery, SGP–GIMS, a premier University Teaching Hospital of India. He completed his training in general surgery from GSVM Medical College, Kanpur and then trained in Endocrine surgery at SGPGI. He has visited various endocrine surgery centres in US, Europe and Japan. He has also served as a Commonwealth Fellow in Oxford, UK and is the recipient of the prestigious International Guest Scholarship of American College of Surgeons. Currently he runs a academic program in Endocrine Surgery with 4 positions of fellows who undergo rigorous 3 years training in Endo–crine Surgery. He is a Fellow of American College of Surgeons and was awarded the Fellowship of Royal College of Surgeons of England (FRCS) and Honorary Fellowship of College of Sur–geons of Sri Lanka. He has provided leadership to many prestigious societies in the capacity of President of ISOPES, Indian association of endocrine surgeons and Indian Thyroid Society as well as council co–coordinator of International Association of Endocrine Surgeons and Asian Association of Endocrine Surgeons. He is practising and teaching Endocrine Surgery for the last 25 years and is one of the handful dedicated endocrine surgeons in the country. He is the pioneer of Robotic surgery in the state of UP. He is currently performing state–of–art endocrine surgical procedures such as:

1. Thyroidectomy using energy–based devices (sutureless thyroidectomy),
2. Endoscopic thyroidectomy, Robotic thyroidectomy
3. Neuromonitoring during thyroid and parathyroid surgery,
4. Endoscopic and open Focused minimally invasive parathyroidectomy with Intra–operative PTH estimation,
5. Endoscopic and retroperitoneoscopic adrenalectomy,
6. Minimally invasive pancreatic surgery for pancreatic endocrine tumours.
7. He also carries out comprehensive management of breast carcinoma including neoadjuvant therapy, breast preserving surgery with Sentinel lymph–node biopsy and breast reconstruction.
8. Trans–sternal and thoracoscopic thymectomy (VATS) for Myasthenia Gravis patients.

He has published more than 200 peer reviewed articles in National and International Journals and has written numerous book chapters. He is the founder editor–in–chief of WORLD JOURNAL OF ENDOCRINE SURGERY which is the official journal of Asian Association of Endocrine Surgeons. He has also authored three fine textbooks: “ENDOCRINE SURGERY MADE EASY” and “ATLAS OF THYROID SURGERY” and EVIDENCE BASED ENDOCRINE SURGERY. His special/research interests include development of training modules for endocrine surgery, study of molecular biology of thyroid and parathyroid tumors, minimally invasive endocrine surgery, and stem cell transplant for diabetes/diabetic foot. Due to his dedicated work in the field of Endocrine Surgery he has been invited to deliver prestigious orations and more than 180 lectures in National and International forums including Mayo Clinic and Harvard University. President of Indian Association of Endocrine Surgeons. He is on the Editorial Advisor Board of Thyroid Research and Practice.

Plenary Lecture

My journey of minimally invasive endocrine surgery

Minimally invasive surgery is especially suited to Endocrine Tumors as they are usually benign and small. In fact, laparoscopic adrenalectomy has now become the standard operation for benign adrenal tumors <10 cm, including Cushing's syndrome, Conn's syndrome and pheochromocytoma. The benefits of laparoscopic surgery like shortened hospital stay, less need for analgesia are also seen in endocrine tumors removed laparoscopically. Most academic centers start with laparoscopic adrenalectomy as the first endocrine laparoscopic procedure. However, the methods of training and number of procedures to attain competency are not so well-defined. However, it is well documented that complications are minimal in high volume centers which perform >30 adrenalectomy per year as compared to low volume centers. After achieving competence in transperitoneal laparoscopic adrenalectomy, the next logical step is to adopt the retroperitoneal endoscopic adrenalectomy which is an attractive option because of its advantage of rapid post operative recovery. However, its not necessary that everyone should necessarily adopt this approach and perhaps one faculty/team member may be motivated to be trained in this approach. Endocrine centers then move to adopt minimally invasive thyroid procedures and most would start with axillary approach moving to the BABA; the latter has been widely adopted by most centers worldwide because of the ease of doing a bilateral thyroid procedure

by this approach as compared to axillary approach. The next level of competence was to adopt the robotic approach for adrenalectomy and Thyroidectomy. Robotic Thyroidectomy is really an attractive option with its advantage of ergonomics to the surgeon and excellent cosmesis for the the patient. Most centers would start with axillary robotic Thyroidectomy (RAT), moving on to BABA . I have adopted the RABIT(Robotic Axillary breast insufflated Thyroidectomy) approach as the procedure of my choice. Starting from robotic hemithyroidectomy for small (<4cm) benign nodules, as more and more expertise will be gained, will move on to procedures like total Thyroidectomy, central compartmental dissection and then lateral neck dissection. Despite the concerns about cost-effectiveness and affordability of robotic approaches, the future belongs to robotics as the cost of the procedure and equipment is successively brought down by availability of newer and many robotic equipments. My journey of minimally invasive surgery has been one of TRIALS, TRIBULATIONS AND TRIUMPHS as I was not exposed to endoscopic procedures during my residency and age notwithstanding, I had to do lot of retro-learning in order to master these advanced laparoscopic and robotic endocrine procedures for the benefit of my patients and for training future generations.

2021 ISOPES Symposium

International Society of Oncoplastic Endocrine Surgeons

June 11 (Fri)

Session 3

Outcomes and evidence updates of various approaches

Chair

Kyung Ho Kang
Ewha Womans University, Korea

Ra-Yeong Song
Chung-Ang University Hospital, Korea

CURRICULUM VITAE

Enrique Mercader

Gregorio Marañon General University Hospital
Spain

EDUCATION

- Surgeon consultant at Endocrine and metabolic surgery unit. General and Digestive Surgery Department. Gregorio Marañón General University Hospital. Madrid. Spain
- Fellow European Board of Surgical Qualification. Endocrine Surgery. Union Européenne des Médecins Spécialistes.
- Researcher at Biosanitary Research Fundation Gregrorio Marañón. Department of Immunofisiology.
- Colaborator Profesor at Complutense University. Madrid. Spain.
- Council member in Spanish Society of Surgeons. Endocrine Surgery Division's Secretary

EXPERTICE AREAS

Clinical practice focus in Endocrine Surgery and currently working in a third level hospital:

1. Thyroid cancer: All types, including first time or rescue surgery for relapse.
2. Parathyroid Surgery: Focus or total/subtotal parathyroidectomy with perfusion assesment using indocyanine green test. Sporadic cases or in hereditary scenarios.
3. Adrenal surgery. Laparoscopic approach for bening diseases or open procedures for adrenocortical cancer with multivisceral resection.
4. Intraoperative neuromonitoring of recurrent laryngeal nerve and external branch of laryngeal superior nerve.
5. Remote thyroid surgery approach. Introducction in Spain of Bilateral axillo-breast approach technique (Trained at Mount Sinai Hospital, Dr W.Innabet and Dr H.Suh)
6. Member of Liver transplantation programm from 2006 to 2015.
7. Multidisciplinay approach in Cutaneous Melanoma: Local, regional or metastatic disease.
8. As a researcher: Investigations in sexual hormons involvement in different areas such infection or initial setting and development of cancer.

Session 3
Outcomes and evidence updates of various approaches

Outcomes and evidence updates of various approaches: Bilateral axillo-breast approach (BABA)

Endoscopic remote approaches appeared in thyroid surgery in order to reduce one persistent morbidity, underestimated by someones: neck cervical scar in an always visible area.

Since Theodor Kocher described what currently we know as conventional or open thyroidectomy (CT), several techniques have tried to reduce neck cervical scar impact. Bilateral axillo breast approach (BABA) is one of the most widespread technique in Asia, particulary in South Korea, who represents the major and leading body of worldwide experience and evidence in this technique.

Initial experience of this approach was reported in 2007 by Choe and it apperared as an evolution of unilateral axillo breast approach to overcome problems regarding visualization and retraction. Initial surgical outcomes showed two concerns: (1) High rate, round 20%, of transient recurrent laryngeal nerve (RLN) injury and (2) little number of lymph nodes collected in central lymphadenectomy. Cumulated experience have reduce RLN palsy´s rate but concerns about quality of central lymphadenectomy persist, although it seems that it doesn´t impact in metastatic lymph node rate or oncological outcomes.

Nevertheless a rapid movement to robotic approach was observed in BABA´s thyroidectomy due to some problems found in endoscopic approach, related to surgical view or dexterity that have been overcome adding robotics.

Robotic BABA thyroidectomy has been applied to thousand of patients and literature reports excellent outcomes. It can be applied to a wide range of pathologies which include benign and low risk papillary thyroid cancer. Robotic BABA thyroidectomy takes more operating time and is more expensive when compared to CT. It causes 60% of central chest paresthesias but it also provides a high cosmetic satisfaction. Metaanalysis don´t show any difference in surgical outcomes compared to CT, although differences affecting the number of lymph nodes collected in central lymphadenectomy are less than in CT but without apparent impact in oncological outcomes.

Compared to other approaches, robotic BABA thyroidectomy is superior to endoscopic BABA, both in surgical and oncological outcomes, although the former takes more time and it is more expensive. Low quality evidence exists regarding when comparing to transoral robotic approach, because series are small and with short follow up. Transoral approach seems to provide better cosmetic outcomes but employing BABA approach more complex techniques can be affored. In this context, recent papers have shown how lateral modified lymphadenectomy can be afforded using BABA robotic approach with good results and excellent cosmetic satisfaction.

In future, we will need more technology in order to increase our clinical and oncological outcomes

BABA approach introduction in Spain happened in 2017 after meeting professor Innabnet and professor Suh at Mount Sinai Hospital in New York. CT is well established in european patient´s and surgeon´s mind, so introducing remote approaches couldn´t be easy. Until today we have operated on 29 patients (32 surgeries) including total thyroidectomies, lobectomies and completion thyroidectomies. We do not operate thyroid cancer and our surgical outcomes are good although transient RLN palsy is higher than the one observed in CT.

On the other hand, cosmetic satisfaction is really high and we belive that BABA thyroidectomy is a really good choice, so we are wide-spreading its benefits in our society.

CURRICULUM VITAE

Sohee Lee
The Catholic University
Korea

EDUCATION

1998 – 2004	M.D. Degree, Yonsei University College of Medicine, Seoul, Korea
2006 – 2009	M.S. Degree, Graduate School of Medicine, Yonsei University, Seoul, Korea
2009 – 2014	Ph.D., Graduate School of Medicine, Yonsei University, Seoul, Korea

ACADEMICS AND CLINICAL POSITIONS

2005 – 2009	Residency, Department of Surgery, Severance Hospital, Yonsei University Medical Center, Seoul, Korea
2009 – 2012	Clinical fellow, Department of Surgery, Severance Hospital, Yonsei University Medical Center, Seoul, Korea
2012 – 2013	Clinical assistant professor, Department of Surgery, Severance Hospital, Yonsei University Medical Center, Seoul, Korea
2013 – 2016	Clinical assistant professor, Department of Surgery, Division of Breast–Thyroid Surgery, Seoul St.Mary's Hospital, The Catholic University of Korea, Seoul, Korea
2016 – 2019	Assistant professor, Department of Surgery, Division of Breast–Thyroid Surgery, Seoul St.Mary's Hospital, The Catholic University of Korea, Seoul, Korea
2019 – 2020	Assistant professor, Department of Surgery, Division of Thyroid–Endocrine Surgery, Enpyeong St.Mary's Hospital, The Catholic University of Korea, Seoul, Korea
2020 –	Associated professor, Department of Surgery, Division of Thyroid–Endocrine Surgery, Enpyeong St.Mary's Hospital, The Catholic University of Korea, Seoul, Korea

Session 3
Outcomes and evidence updates of various approaches

A to Z for MIT beginner: Transaxillary approach

Patient quality of life has received increasing attention, and surgeons developed new surgical techniques to meet the demands of the times. Transaxillary endoscopic and robotic thyroidectomy that eliminates the need for a cervical incision and they has been a feasible and safe alternative in treating thyroid disease.

Transaxillary thyroidectomy has achieved safe and meticulous management of thyroid disease with remarkable cosmetic excellence. Furthermore, they can offer many functional benefits including reducing postoperative pain, sensory changes, and early recovery of voice and swallowing functions, and better patient's body image and these can improve the patient's quality of life.

However, the surgical complication rate may increase during the initial period of the learning curve, because this approach has its technical complexity and a steep learning curve. The aim of this study was to suggest the tips to help beginner surgeons to adjust to a new surgical method.

CURRICULUM VITAE

Jun Ho Lee
Sungkyunkwan University
Korea

EDUCATION

2002 – 2008	Medical Doctor, College of Medicine, Catholic University of Daegu, Korea.
2013 – 2015	Master of Medicine, Graduate School of Medicine, Sungkyunkwan University, Korea

PROFESSIONAL EXPERIENCE

2008 – 2009	Intern, SoonChunHyang University Hospital.
2009 – 2013	Resident, Department of Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea
2013 – 2015	Clinical instructor, Breast and Endocrine Division, Department of Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea.
2015 – 2016	Clinical Professor, Breast and Endocrine Division, Department of Surgery, Sungkyunkwan University Samsung Changwon Hospital, Changwon, Korea.
2016 –	Assistant Professor, Breast and Thyroid Cancer Center, Department of Surgery, Sungkyunkwan University Samsung Changwon Hospital, Sungkyunkwan University School of Medicine, Changwon, Korea.

Session 3
Outcomes and evidence updates of various approaches

Thyroid: Transoral approach

Various remote-access thyroidectomy procedures have been developed to avoid scarring of the neck during thyroid surgery. Among the variety of remote-access approaches, the transoral approach has recently become popular. In recent years, many articles have been published on the outcomes of the transoral approach, that described the transoral thyroidectomy could be performed safely and showed comparable outcomes to other remote-access procedures for thyroidectomy in most patients with surgical thyroid diseases.

The operating times between remote-access approaches were not significantly different, and the rates of adverse events were also acceptable, including intraoperative bleeding, hospital stay, recurrent laryngeal nerve injury, hypoparathyroidism. Especially, transoral approach-specific complications were also acceptable, such as mental nerve injury, infection. Nowadays, it is widely accepted that the transoral approach is one of the choices for remote-access thyroidectomy.

In the past period, many studies have been conducted on the surgical safety and feasibility of transoral thyroidectomy. Based on these studies, several meta-analyses and systemic reviews have been reported.

However, more research is required on stimulated thyroglobulin, RAI scan after total thyroidectomy, and lymph node dissection, which are related to surgical completeness.

Recently, beyond surgical and oncological safety via transoral approach, some functional studies were reported, such as benefits of QOL, cosmesis, economic burden, voice and swallowing outcomes, etc.

Several recent studies have reported that Transoral thyroidectomy is equivalent or superior to the above mentioned goals.

CURRICULUM VITAE

Shirley Liu

The Chinese university of Hong Kong
Hong Kong

PROFESSIONAL QUALIFICATIONS

2003	Bachelor of Medicine & Bachelor of Surgery, Chinese University of Hong Kong
2010	Fellow of Hong Kong Academy of Medicine (Surgery)
2010	Fellow of College of Surgeons of Hong Kong (General Surgery)
2010	Fellow of Royal College of Surgeons of Edinburgh (General Surgery)
2018	Fellow of American College of Surgeons

Dr Shirley Liu is the Chief of Service of the Department of Surgery of Alice Ho Miu Ling Nethersole Hospital (AHNH). She is also the Head of Endocrine Surgery Division of the New Territories East Cluster Hospitals and a Clinical Associate Professor (Honorary) of the Department of Surgery of CUHK.

Shirley currently serves as the Vice President of Hong Kong Association of Endocrine Surgeons, the Honorary Secretary of Hong Kong Thyroid Society, and the council members of Hong Kong Society of Metabolic & Bariatric Surgery, Hong Kong Society of Minimal Access Surgery, and Hong Kong Society of Parenteral and Enteral Nutrition.

Shirley graduated from the Chinese University of Hong Kong in 2003. She completed her general surgery residency in PWH and obtained fellowships from the Royal College of Surgeons of Edinburgh and the College of Surgeons of Hong Kong in 2010. She became an International Fellow of American College of Surgeons in 2018.

Shirley subspecializes in endocrine and bariatric surgery. She is an active researcher and has published over 50 original articles in peer-reviewed journals. Her academic contributions have been recognized by over 20 international awards, including the Fujimoto Prize (First Prize) from Asian Association of Endocrine Surgeons in 2014, the International Association of Endocrine Surgeons (IAES) Best Clinical Paper Prize in 2015, the IFSO-APC 2015 Top 5 Papers Award, and the IAES Dr John Farndon Award in 2017.

Session 3
Outcomes and evidence updates of various approaches

Radiofrequency ablation for adrenal disease

Image-guided percutaneous radiofrequency ablation (RFA) is an emerging local ablative treatment for functional adrenal lesions. It offers a new treatment paradigm for both healthy and poor risk patients with benefits lying between laparoscopic adrenalectomy and medical therapy. CT-guided percutaneous RFA provides a lot of theoretical advantages. Unlike standard laparoscopic adrenalectomy, general anaesthesia is often not required for percutaneous RFA. The percutaneous access technique also implies that RFA is essentially a scarless procedure. RFA does not sacrifice the normal adrenal tissue and is cortical preserving. It is technically very feasible for percutaneous access into the retroperitoneally located adrenal glands. The adrenal glands are protected with the para-renal adipose tissues which can serve as a natural heat insulator to prevent heat sink effect of RFA. RFA is readily repeatable even if biochemical resolution cannot be achieved after one session of RFA. To treat primary aldosteronism, RFA is a safe procedure with over 90% clinical success rate for biochemical resolution. Comparing to surgery, RFA was associated with better short-term outcomes, comparable safety and comparable clinical efficacy on biochemical and hypertension resolution. The treatment effect was also durable with minimal long-term recurrence. As for Cushing's syndrome and pheochromocytoma, the current evidences did not support the positive role of RFA. More evidences are required to confirm the feasibility and verify the safety of RFA on these conditions.

2021 ISOPES Symposium

International Society of Oncoplastic Endocrine Surgeons

June 11 (Fri)

Session 4

Advanced oncoplastic surgery

Chair

Won Seo Park
Kyung Hee University, Korea

Sang-Wook Kang
Yonsei University, Korea

CURRICULUM VITAE

Hyunsuk Suh

The Suh Scarless Thyroid Surgery Center
USA

EDUCATION

1997 – 2001	B.S. in Biology, Emory University
2001 – 2006	M.D., Johns Hopkins University School of Medicine

PROFESSIONAL EXPERIENCE

2015 – 2020	Attending, General Surgery The Mount Sinai Hospital Assistant Professor of Surgery Program Director of Mount Sinai Endocrine Surgery Fellowship Icahn School of Medicine at Mount Sinai Director of Surgery at Downtown Union Square Mount Sinai

Session 4
Advanced oncoplastic surgery

BABA MRND

Background:

Robot bilateral axilla breast approach (BABA) is the most comprehensive remote-access thyroidectomy techniques for both benign and malignant thyroid disorders. Several case series have demonstrated the efficacy of BABA modified radical neck dissection (MRND) technique in management of metastatic thyroid cancers in the lateral neck. The aim of this presentation is to provide an overview and the outcome of the BABA MRNDs in the US.

Methods

BABA MRNDs were performed utilizing the same four incisions for thyroidectomy (bilateral axillary and periareolar; 8mm each) Da-Vinci Si and Xi models were used (Intuitive Surgical, Sunnyvale CA, USA). Once the total thyroidectomy and central neck dissection have been performed, unilateral or bilateral MRND have been performed.

Results

Total of 12 MRNDs were performed. Three patients underwent a bilateral robotic MRNDs. The patients were admitted overnight and discharged home on POD1. There were no transient or permanent hypoparathyroidism. There were no vocal cord paresis or paralysis.

There were no other complications. One patient had a thyroid cancer recurrence in the anterior mediastinum.

Conclusion

This is the initial robotic BABA MRND experience in the United States. This case series demonstrates the feasibility and efficacy of BABA MRND technique which provides excellent visualization of the anatomic structures, adheres to important principles of thyroid surgery, and facilitates a complete anatomic dissection while conferring excellent cosmetic and confidential benefits.

CURRICULUM VITAE

Cho Rok Lee
Yonsei University
Korea

EDUCATION / POSTGRADUATE TRAINING

1999 – 2005	M.D. Kosin University College of Medicine, Korea
2008 – 2013	M.S. Yonsei University College of Medicine, Korea
2006 – 2010	Residency in department of Surgery, Yonsei University Severance Hospital, Seoul, Korea
2011 – 2013	Fellowship in department of Surgery, Yonsei University College of medicine, Seoul, Korea
2013 –	Ph.D. Yonsei University College of Medicine, Korea

HOSPITAL / ACADEMIC POSITION

2013 – 2013	Contact doctor, Department of Surgery, National Health Insurance Service Ilsan Hospital
2013 – 2021	Clinical Assistant Professor, Division of Thyroid–Endocrine Surgery Department of Surgery, Yonsei University College of Medicine, Seoul, Korea
2021 –	Clinical Associate Professor , Division of Thyroid–Endocrine Surgery Department of Surgery, Yonsei University College of Medicine, Seoul, Korea

Session 4
Advanced oncoplastic surgery

Advanced oncoplastic surgery: Transaxillary approach MRND

Robot-assisted surgery is a recent innovation in the minimally invasive surgery field. There have been dramatic changes in thyroid surgery techniques over the last two decades. In an effort to shift the surgical scar away from the neck, several alternative operation methods have been developed.

Traditional modified radical neck dissection (MRND) was performed with a long incision in the anterior neck. However, with the development of robotic instruments, tranxaxillary robotic mRND performed over 10years for treatment of thyroid carcinoma with lateral neck node metastases. Transaxillary robotic mRND started in 2009 and has accumulated hundreds of surgical experiences to date.

We will review the transaxillary robotic mRND in this lecture.

CURRICULUM VITAE

Insoo Suh
NYU Langone Health
NY, USA

EDUCATION AND TRAINING

1999	BS, Molecular Biophysics & Biochemistry, Yale University, New Haven, CT
2004	MD, Medicine, University of California, San Francisco, San Francisco, CA
2004 – 2005	Intern, Surgery, University of California, San Francisco
2005 – 2010	Resident, Surgery, University of California, San Francisco
2007 – 2009	Research Fellow, Endocrine Surgery, University of California, San Francisco
2010 – 2011	Chief Resident, Surgery, University of California, San Francisco
2011 – 2012	Fellow, Biodesign Innovation, Stanford University, Stanford, CA
2019 – 2020	Faculty Trainee, UCSF–Coro Faculty Leadership Collaborative, University of California, San Francisco

APPOINTMENTS

2011 – 2020	Attending, Endocrine and General Surgery, San Francisco Veterans Affairs Medical Center, San Francisco, CA
2013 – 2013	Attending, General Surgery, Kaiser Permanente Medical Center, Santa Clara, CA
2013 – 2021	Attending, Endocrine and General Surgery, UCSF Medical Center, San Francisco, CA
2013 – 2014	Clinical Instructor, Surgery, University of California, San Francisco
2014 – 2020	Assistant Professor, Surgery, University of California, San Francisco
2020 – 2021	Associate Professor, Surgery, University of California, San Francisco

Session 4
Advanced oncoplastic surgery

Hybrid transoral thyroidectomy: Submental approach (TOaST)

The transoral endoscopic thyroidectomy vestibular approach (TOETVA) has gained in popularity and adoption as a promising remote-access endocrine surgical technique to eliminate a visible scar in the neck. TOETVA has been demonstrated to be safe and efficacious for selected indications; however, there remain potential limitations and opportunities to innovate upon this technique. For instance, there is an inherent limitation of the middle oral incision with respect to size of tumor and specimen that can be safely removed without disruption, as well as potential sensory disturbances over the anterior chin with extensive dilation and dissection. The hybrid TransOral and Submental Technique (TOaST) was developed to address these potential limitations. In this technique, the middle endoscopic incision is relocated out of the oral vestibule to the submental crease, which is a cosmetically hidden and favorable location used often in facial aesthetic procedures such as neck lifts and plastysmaplasty. In this presentation we discuss the results of this technique as well as its benefits and its minimal cosmetic tradeoffs compared to the original TOETVA technique.

CURRICULUM VITAE

Jason YK Chan

The Chinese university of Hong Kong
Hong Kong

PRESENT ACADEMIC POSITION

2020 – Associate Professor (Clinical), Department of Otorhinolaryngology, Head and Neck Surgery, The Chinese University of Hong Kong

PREVIOUS RELEVANT RESEARCH WORK

I have been actively involved in translational and outcomes research in head and neck cancer, particularly minimally invasive head and neck surgery, genomics and the role of the microbiome in head and neck cancers.

Session 4
Advanced oncoplastic surgery

Robotic single port thyroid surgery

Single port surgery has received increasing attention with the increasing use of the da Vinci SP system for minimally invasive surgery. The system is FDA approved for use in Urology and Otolaryngology, Head and Neck Surgery. Pioneered in Korea, the use of the single port system for thyroid surgery has been increasingly used, but its uptake globally is still at its infancy. Here we will explore the benefits and challenges of single port robotic thyroid surgery and explore other potential robotic advances that may also eventually be useful in single port thyroid surgery.

CURRICULUM VITAE

Ji-sup Youn
Sungkyunkwan University
Korea

EDUCATION

1991 – 1998	M.D. Wonju Medical College, Yonsei University, Seoul, Korea
2002 – 2008	M.S. Graduate School, Yonsei University, Seoul, Korea
2009 –	Ph.D. Graduate School, Yonsei University, Seoul, Korea
1999 – 2003	Resident, Department of Surgery, Yonsei University Severance Hospital, Seoul, Korea
2006 – 2008	Fellow, Division of Endocrine Surgery, Department of Surgery, Yonsei University College of Medicine, Seoul, Korea

APPOINTMENTS

2006 – 2008	Fellow in Division of Endocrine Surgery, Yonsei University, College of Medicine, Seoul, Korea
2008 –	Professor; Department of Surgery, Sungkyunkwan University School of Medicine, Seoul, Korea
2011 –	IAES/ISS & AOTA member
2012 – 2016	secretary, KATES (Korean Association of Thyroid–Endocrine Surgeon)
2015 –	director of general business, KINMOS (Korean Intraoperative Neeural Monitoring Society)
2014 – 2015	director of finance, KAROS (Korean Association of Robotic Surgery)
2015 – 2017	director of information, KAROS (Korean Association of Robotic Surgery)
2018 – 2020	director of international cooperation, KATES (Korean Association of Thyroid–Endocrine Surgeon)
2018 – 2020	director of KATES(Korean Association of Thyroid–Endocrine Surgeon) guideline committee
2020 –	General secretary of KATES

Session 4
Advanced oncoplastic surgery

Single port adrenal surgery

2021 ISOPES Symposium

International Society of Oncoplastic Endocrine Surgeons

June 12 (Sat)

Session 5

Unedited videos

Chair

Kyu Eun Lee
Seoul National University

Ja Seong Bae
The Catholic University

CURRICULUM VITAE

June Young Choi
Seoul National University
Korea

EDUCATION

1996 – 2002	Bachelor's degree, Seoul National University College of Medicine, Seoul, Korea
2010 – 2012	Master's degree, Seoul National University College of Medicine, Seoul, Korea
2012 – 2018	Doctor of Philosophy, Seoul National University College of Medicine, Seoul, Korea
2002 – 2007	Internship & Resident Course, Department of Surgery, Seoul National University Hospital, Seoul, Korea

ACADEMIC APPOINTMENTS

2013 – 2016	Clinical Assistant Professor, Department of Surgery, Seoul National University Bundang Hospital, Korea
2016 –	Clinical Associate Professor, Department of Surgery, Seoul National University Bundang Hospital, Korea

Session 5
Unedited videos

BABA robotic thyroidectomy

Introduction

Robotic thyroidectomy with bilateral axillo-breast approach (BABA) was introduced in 2008,and has become popular worldwide. Many evidences support the safety and feasibility of BABA robotic thyroidectomy. Recently, there was a report that it was safe to perform the robotic surgery up to 2 cm of the tumor. As the skills have been upgraded, surgeons adapt the procedure to more advanced cases.

Especially in case of lateral neck metastasis, 8 to 15 cm long incision is needed, and young women can be reluctant to have such a long incision in the neck. It is a great help to have an 'oncoplastic thyroid surgery' for those patients.

Surgical instruments

- Vascular tunneler (Gore-Tex, Flagstaff, AZ, USA). Harmonic (Ethicon Endo-Surgery, Cincinnati, OH, USA).
- Plastic endobag (EndoCatch, Auto Suture, United States Surgical, Norwalk, CT, USA).
- da Vinci robotic instruments: Maryland grasp and Prograsp (Intuitive Surgical Inc., Sunnyvale, CA, USA).
- 10 mL syringes with 22-gauge spinal needle: 200 mL normal saline with 1 mL epinephrine (1:200,000).
- Surgical pillow.

Surgical procedures

Position

The patient is placed in the supine position on an operating table with a surgical pillow under the shoulders. The patient's neck is gently extended to expose the neck. Arms should be fixed in the abducted position in order to expose the axillae. To facilitate dissection of lower neck and to get rid of blind spot, the elevation of the circumareolar site with an elastic band is helpful (Figure 2). For MRND, it is also helpful to reposition the direction of the camera port so that it corresponded with medial border of the SCM muscle. A slight clockwise rotation of the camera port is needed for left MRND. The location of the camera port for the right MRND is different from that for the left. After releasing the docking, the camera port is moved to the left areolar incision, and the third arm is moved to the right side of the second arm.

Flap design & dissection

Draw guidelines along the landmarks of the chest and the neck, i.e., midline, thyroid cartilage (V), cricoid cartilage (+), anterior border of the SCM muscle, the clavicles, suprasternal notch (U), circumareolar & axillary incisions and trajectory lines from the incision to cricoid cartilage as described in the previous chapter. Epinephrine-saline mixture is then injected into the working space (6). This "hydrodissection" technique makes a saline pocket in the subplatysmal layer, which decreases the bleeding in the flap area and makes the subsequent dissection easier. The working space for BABA robotic MRND should be made wider than the flap for usual robotic thyroidectomy. It should be extended over the lateral border of the ipsilateral SCM muscle laterally and to the lower border of the submandibular gland and posterior belly of digastric muscle superiorly. During flap dissection to the lateral side, the great auricular nerve is encountered. Identifying this nerve is very important, because it is helpful to predict the location of the

spinal accessory nerve at Erb's point and injury of the great auricular nerve would make loss of sensation around earlobe area, which can lower the quality of life seriously.

Thyroidectomy

The midline of the strap muscle was identified and separated. After visualizing the cricothyroid membrane, isthmus, and trachea, the isthmus was divided with the ultrasonic shears, which facilitated dissection of the gland laterally and posteriorly, and allowed for optimal visualization of the superior thyroid pedicle. Thyroidectomy was performed while identifying and preserving the parathyroid glands and recurrent laryngeal nerve. The dissected thyroid lobe was extracted with an endoplastic bag. Lesion-side central compartment dissection was performed, with care taken to ensure that the recurrent laryngeal nerve was not damaged in patients with a concomitant malignancy or suspicious nodule. The contralateral lobe was dissected in the same manner.

Closure

After complete removal of the thyroid, the operative field was irrigated with saline, and meticulous hemostasis was achieved. The midline was closed by robotic endo-suturing. In cases of selective lateral LND, a short segment of one double polydioxanone loop (PDS, Ethicon Inc., Cincinnati, OH) was used for traction of the sternocleidomastoid muscle.

References

1. Lee KE, Koo do H, Kim SJ, et al. Outcomes of 109 patients with papillary thyroid carcinoma who underwent robotic total thyroidectomy with central node dissection via the bilateral axillo-breast approach. Surgery 2010;148:1207-13.

2. Chai YJ, Suh H, Woo JW, et al. Surgical safety and oncological completeness of robotic thyroidectomy for thyroid carcinoma larger than 2 cm. Surg Endosc 2017;31:1235-40.
3. Choi JY, Lee KE, Chung KW, et al. Endoscopic thyroidectomy via bilateral axillo-breast approach (BABA): review of 512 cases in a single institute. Surg Endosc 2012;26:948-55.
4. Choi JY, Kang KH, Robotic modified radical neck dissection with bilateral axillo- breast approach, Gland Surg 2017;6(3):243-249

CURRICULUM VITAE

Tae-yon Sung
Ulsan University
Korea

EDUCATION

2002	Bachelor of Medicine, Yonsei University Wonju College of Medicine, Korea
2006	Master of Medicine, Yonsei University Graduate School, Korea
2012	Doctor of Philosophy, Yonsei University Graduate School, Korea

CAREER

2013 – 2017	Clinical Assistant Professor, Division of Endocrine Surgery, Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Korea
2018 –	Associate Professor, Division of Endocrine Surgery, Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Korea

Session 5
Unedited videos

Robotic transaxillary thyroidectomy

Robotic-assisted surgery has become a widely performed surgical technique these days and robotic thyroidectomy is also one of them. Among many other surgical approaches for robotic thyroid surgery, robotic tranaxillary thyroidectomy is a safe and feasible approach when performing thyroidectomy for benign and malignant thyroid disease.

CURRICULUM VITAE

Seok-Mo Kim
Yonsei University
Korea

EDUCATION

1997 – 2003	Bachelor Degree, Yonsei University College of Medicine, Seoul, Korea
2005 – 2013	Master's Degree of Medical Science, Yonsei University College of Medicine, Seoul, Korea
2014 – 2018	Ph.D. of Medical Science, Yonsei University College of Medicine, Seoul, Korea

CAREER

2003 – 2004	Intern, Department of Education and Training Severance Hospital, Yonsei University Health System, Seoul, Korea
2004 – 2008	Resident, Department of Surgery, Yonsei University Health System, Seoul, Korea
2008 – 2011	Military service, General Surgeon, Pyeongchang health center and county hospital
2012 – 2013	Fellowship, Department of Surgery, Yonsei University College of Medicine, Yonsei University Health System, Seoul, Korea
2013 – 2021	Assistant clinical professor, Department of Surgery, Yonsei University College of Medicine, Yonsei University Health System, Seoul, Korea
2021 –	Associate professor, Department of Surgery, Yonsei University College of Medicine, Yonsei University Health System, Seoul, Korea

Session 5
Unedited videos

Thyroid: Transoral approach

Introduction: Transoral endoscopic thyroidectomy by a vestibular approach (TOETVA) is a novel technique for thyroid cancer operation. Compared with other endoscopic approaches including transaxillar or bilateral axillobreast approach, it requires substantial dissection to reach the thyroid and provides the shortest access to the target organ.

Material and Methods: The aim of this video is to provide detailed instruction of the TOETVA. A euthyroid female patient presented for routine checkup. Ultrasonography showed a suspicious nodule on the right thyroid gland. Fine needle aspiration biopsy revealed Category VI papillary thyroid carcinoma. TOETVA was performed. A specially designed endoscopic retractor for transoral thyroidectomy was used.

Results: Right thyroid lobectomy with central compartment neck dissection was performed effectively through this novel endoscopic approach without any intraoperative complications such as recurrent laryngeal nerve injury or blood loss. The specially designed endoscopic retractor that retracts the strap muscles enables two-handed dissection. Final pathologic result showed papillary carcinoma and a microcarcinoma and all of the five retrieved central nodes were free

from tumor. The patient had an excellent cosmetic outcome without complications.

Conclusions: TOETVA is safe and feasible and provides an excellent cosmetic outcome.

2021 ISOPES Symposium

International Society of Oncoplastic Endocrine Surgeons

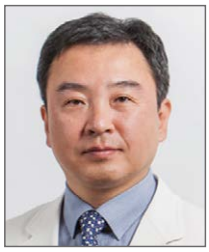
June 12 (Sat)

Presidential Lecture

Chair

Ki Wook Chung
Ulsan University, Korea

CURRICULUM VITAE



Jee Soo Kim
Sungkyunkwan University
Korea

EDUCATION

1982 – 1988	Medical School, School of Medicine, Seoul National University College of Medicine, Seoul, Korea
1988 – 1989	Internship, Seoul National University Hospital, Seoul, Korea
1989 – 1993	Residency, Seoul National University Hospital, Seoul, Korea
1998 – 1997	Fellowship, Seoul National University Hospital, Seoul, Korea
1998	Master's degree, Department of Surgery, School of Medicine, Seoul National University College of Medicine, Seoul, Korea
2000	Ph.D., Department of Surgery, School of Medicine, Seoul National University College of Medicine, Seoul, Korea

CAREER

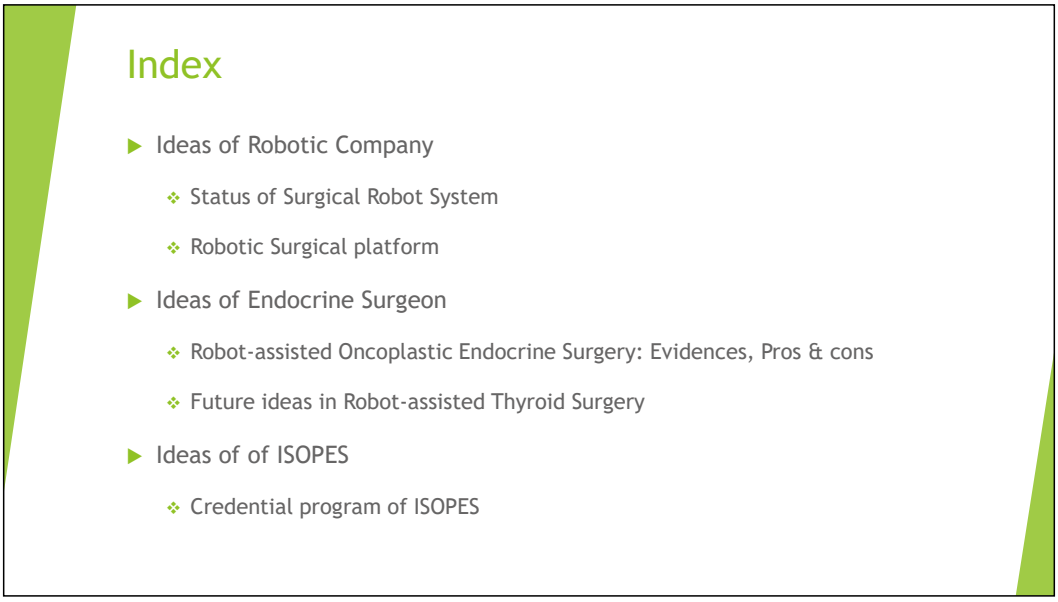
1997 – 2003	Asan Medical Center(Gangneung)
2003 – 2007	Kunkuk University Hospital
2007 –	Sungkyunkwan University, Samsung Medical Center Professor, Division Chief of Endocrine Surgery, Department of Surgery, Samsung Medical Center

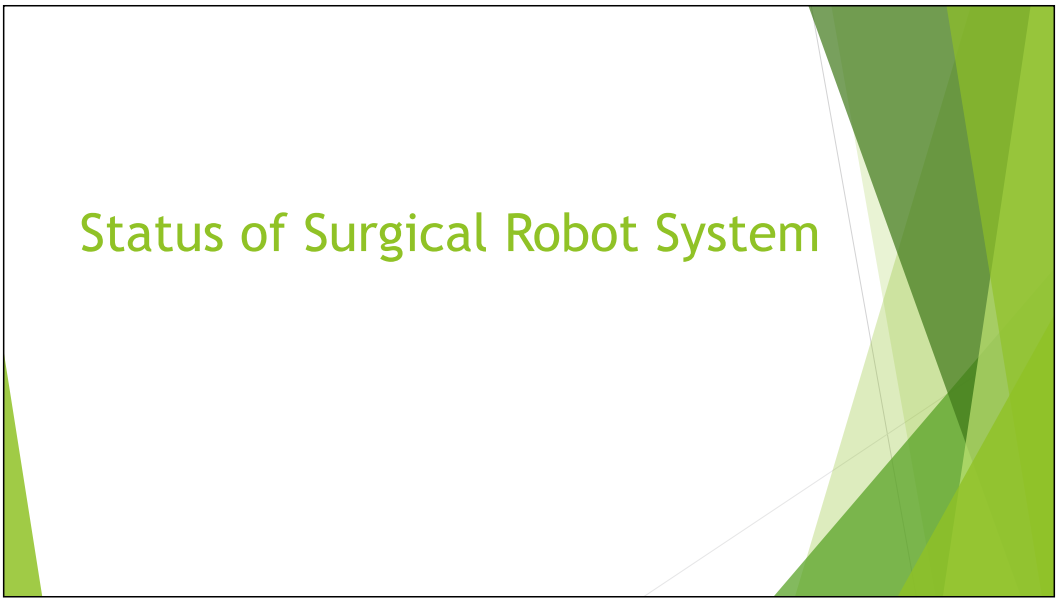
NATIONAL AND INTERNATIONAL SOCIETIES

International Society of Oncoplastic Endocrine Surgeons, President
The Korean Breast Cancer Society, Public Relations Committee
The Korean Endocrine Society, Editorial Director

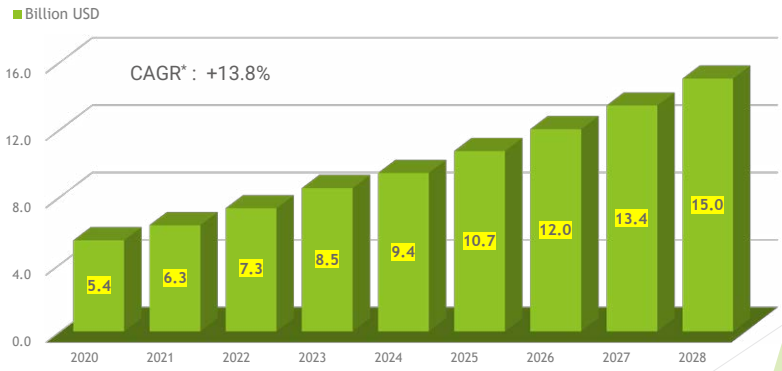
Presidential Lecture

Sharing ideas in oncoplastic thyroid surgery





Global Surgical Robot Market, 2020-2028

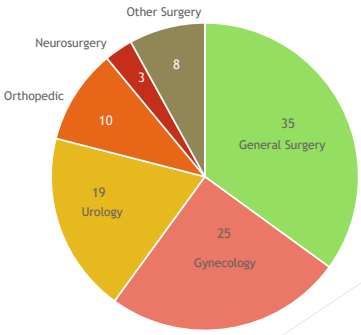


Statzon | Global Robotics Industry Data & Forecasts

*CAGR: compound annual growth rate

Global Surgical Robot Market by Application in 2020

- General surgery is valued at around 1.9 billion USD
- Expected to grow at the highest rate during the forecast period until 2028.
- General surgery comprises a broad range of surgery, such as gastrointestinal tract, trauma to the abdomen and thorax, Endocrine, and breast conditions



Statzon | Global Robotics Industry Data & Forecasts

Robotic Surgical Platforms

Large size

- Da Vinci Surgical System
- Senhance
- BITRACK
- Revo-I
- Hinotori

Moderate size

- Versius Robotic Surgery System (Cambridge Medical Robotics Ltd., Cambridge, UK)
- SurgiBot-SPIDER The SurgiBotTM (TransEnterix, Morrisville, NC)
- MiroSurge (DLR Institute of Robotics and Mechatronics, Weßling, Germany)
- STRAS-iCUBE The STRAS system, version 2 (iCUBE, Strasbourg, France)

Small size

- Invendoscopy E210 System
- NeoGuide Colonoscope
- The Flex robotic system
- Retraction Robot
- Scorpion Shaped Endoscopic Robot
- SPORT surgical system
- Miniature in vivo robot (MIVR)
- Endomina
- Medical Microinstruments
- Capsule robot

Ref: Emerging surgical robotic technology: a progression toward microbots. Karl K et.al. Ann Laparosc Endosc Surg 2020;5:3

Robotic systems are evolving

- Intuitive Surgical have dominated the surgical robotic market and maintained a considerable market share for a significant period of time.
- With the original da Vinci patents expired,
- Many robotic surgical systems have been developed, and clinical trials have been performed in various countries.
- As this robotic era, we will see intense competition as companies continue to develop and market new devices.
- Newer systems seek to improve on the da Vinci model through three main avenues: novel technology, reduced cost, and size reduction.
- Newer systems also proport to improve on robot-assisted surgery(RAS) accessibility through lowered cost, though without widespread usage the cost savings are not yet substantiated

Robot-Assisted Oncoplastic Endocrine Surgery

- Evidences
- Advantages & Limitations

Summary : Evidences of RAT
(Robot Assisted Thyroidectomy)

complication rate : **Equivalent**
hypocalcemia (transient/ permanent)
Hypoparathyroidism (transient / permanent)
RLN palsy (transient / permanent)
hematoma, postoperative bleeding, seroma, chyle leakage
the Voice Handicap Index-10 (VHI-10) score

Superior
better cosmetic satisfaction
low swallowing impairment

Surgical completeness : Equivalent
postoperative radioactive iodine (RAI) ablation rate,
number of RAI ablation sessions,
mean total RAI ablation dose,
mean stimulated Tg of postoperation RAI,
proportion of stimulated Tg < 1.0 ng/ml on first ablation.

Inferior
longer operation time
smaller number of retrieved LNs
Higher postoperative serum Tg level
Higher total drain amount

Find what patients really want

- Oncologic outcome : most important
- Complication & sequelae : very important
- Pain: important but can endure if it is temporary
- Cosmesis : important vs no concern
- Cost : important vs. not important

World J Surg (2019) 43:540–551
https://doi.org/10.1007/s00268-018-4802-8

ORIGINAL SCIENTIFIC REPORT

A Propensity Score-matched Comparison Study of Surgical Outcomes in Patients with Differentiated Thyroid Cancer After Robotic Versus Open Total Thyroidectomy

Dong Sik Bae[1] · Do Hoon Koo[1]

Open TT (n=246) vs. Robot TT (n=123)

Published online: 21 September 2018

Abstract

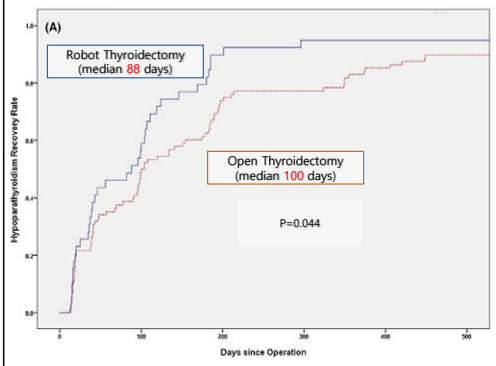
Introduction The aim of this study, from a surgical, oncological, and functional perspective, was to identify whether bilateral axillo-breast approach robotic total thyroidectomy (RTT) for differentiated thyroid cancer (DTC) has different surgical outcomes compared to open total thyroidectomy (OTT).

Methods Initially, 796 patients who underwent total thyroidectomy were primarily reviewed and 178 who were ineligible for analysis were excluded. Propensity score matching analysis adjusted for clinicopathological characteristics (sex, age, body mass index, extent of central node dissection, tumor size, extrathyroidal extension, and thyroiditis) was conducted, with 246 patients in the OTT group matched with 123 patients in the RTT group.

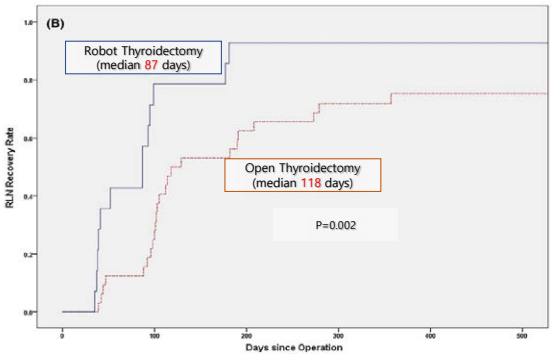
Results There were no significant differences in surgical outcomes in terms of surgical safety and oncological safety between the OTT and RTT groups, except in mean operation times (123.51 ± 32.63 vs. 198.39 ± 37.93 min, respectively; $P < 0.001$). However, the median parathyroid and laryngeal function recovery times were shorter in the RTT group than in the OTT group [88 ± 33.09 (95% CI: 23.148–152.852) vs. 100 ± 16.20 (95% CI: 68.242–131.768) days; $P = 0.044$ and 87 ± 32.40 (95% CI: 23.489–150.511) vs. 118 ± 49.50 (95% CI: 20.985–215.015) days; $P = 0.002$].

Conclusions The recovery times of laryngeal and parathyroid function were significantly shorter in RTT patients than in OTT patients for DTC. To verify a definitive conclusion about the superiority of robotic total thyroidectomy in terms of parathyroid and laryngeal function recovery, further studies may be necessary.

Hypoparathyroidism recovery rate



RLN palsy recovery rate



Delicate and Precise Robotic procedure prevent traction and compression injuries

Kaplan–Meier estimates of the relationship between the recovery functions and surgical method (open vs. robot):
(A) hypoparathyroidism (P = 0.044) and (B)recurrent laryngeal nerve (RLN) palsy (P = 0.002)

Ref: World J Surg (2019) 43:540–551 A Propensity Score-matched Comparison Study of Surgical Outcomes in Patients with Differentiated Thyroid Cancer After Robotic Versus Open Total Thyroidectomy. Dong Sik Bae and Do Hoon Koo

Robot-Assisted Thyroid Surgery

- Evidences
- Advantages & Limitations

Advantages & Pitfalls of Robotic Surgery Compared to other Department

	In General (URO, GI)	Endocrine(Thyroid)
Efficacy & accuracy	Good	Good
Complications	less	Equivocal
Blood loss	less	Less or comparable
recovery time	Short	Similar / Sl. long
Viewpoint on the scar	To minimize	To Hide
Scar location	On site	Remote site
Cost	High	High
Oncologic Safety	comparable	comparable
Operation time	less	More
Pain	less	More
Main reason	Minimal invasive	Scar oriented

Possible to overcome the pitfalls ?

- **High cost**
- **Equivalent complication rate**

  (RLN injury, hypoparathyroidism)
- **Equivalent surgical outcomes**

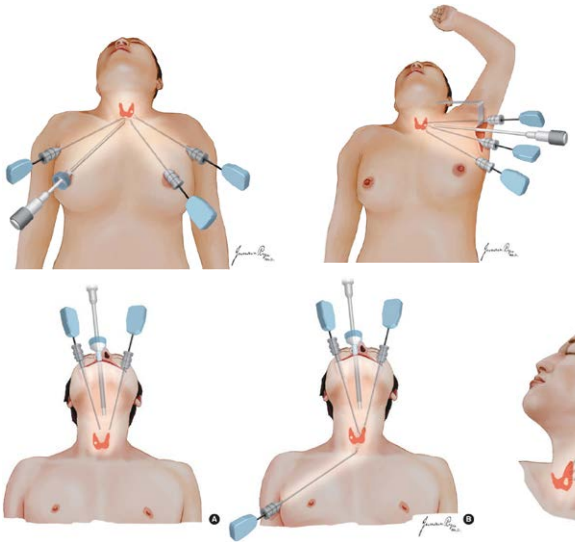
1. smaller number of retrieved LNs
2. Higher postop serum Tg level

- **In selected patient?**

- Long operation time
- Need extensive dissection
- Every approach has its own drawbacks
- remote access for cosmesis
- Replace open procedure?

Operation time in each procedures of Robot-Assisted Thyroidectomy

	Open	Robot_initial	Robot_experienced
Positioning	Short	Mid to long	Short
Flap formation	Short	Long (Basic problem of remote access approach)	Moderate
Docking	no	Sometimes long	short
Console time (Main procedure)	short	Long Handing the Robot system Difficult in managing the situation	Moderate to short
Closing time	long	short	short



Pain & recovery time

Remote accesses inevitably need extensive dissection

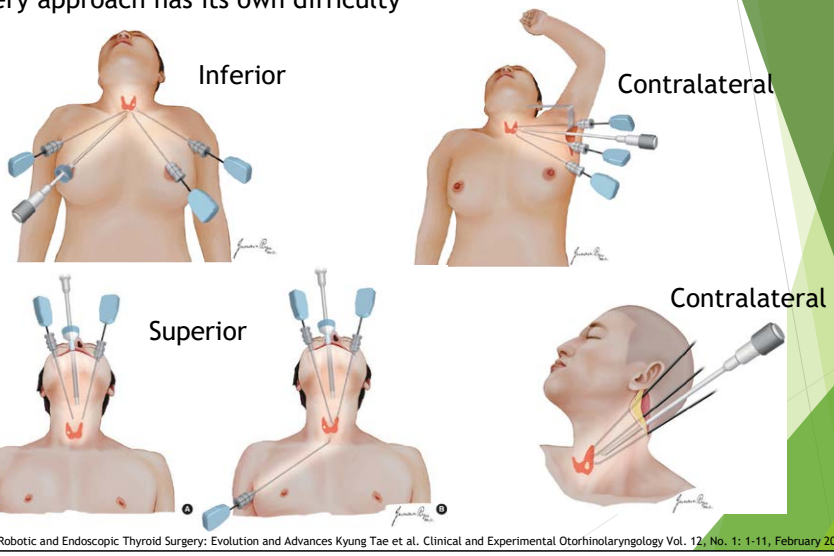
Ref: Robotic and Endoscopic Thyroid Surgery: Evolution and Advances Kyung Tae et al. Clinical and Experimental Otorhinolaryngology Vol. 12, No. 1: 1-11, February 2019

Future Ideas in Robot-assisted Thyroid Surgery

Do not stick to the Principles

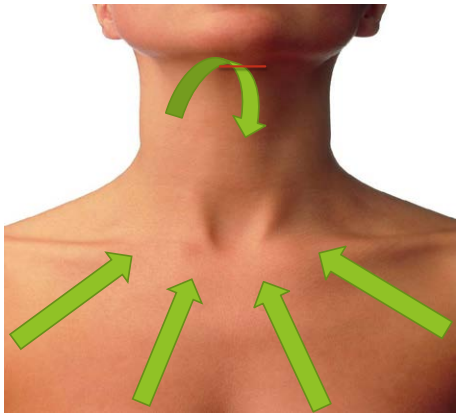
- 'My approach is the best'
- ' No Scar in the neck '

Every approach has its own difficulty



Ref: Robotic and Endoscopic Thyroid Surgery: Evolution and Advances Kyung Tae et al. Clinical and Experimental Otorhinolaryngology Vol. 12, No. 1: 1-11, February 2019

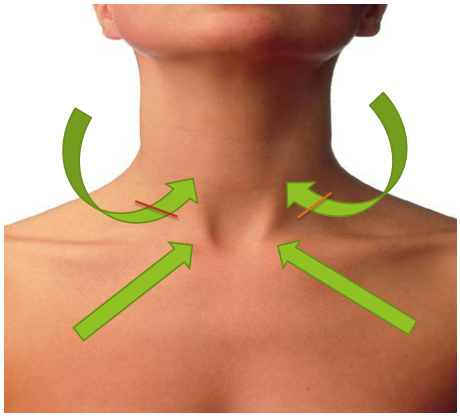
Combination of various Approaches



Minimize difficulty zone
Avoid procedure related complication

Hybrid Robot

(Minimal invasive Robot-Assisted Thyroidectomy)



Mini-incision

1. On site Flap formation
2. Cope with difficult event
3. Broaden indication
4. advanced disease
5. ↓ flap time
6. ↓ Pain
7. ↓ Recovery time
8. ↓ Cosmesis

Open Conventional

Robot or Endoscopy

Hybrid robot

Introduction of ISOPES

ISOPES
International Society of
Oncoplastic Endocrine Surgeons

- the society of surgeons who are interested in performing endocrine surgery with minimal scar and maximum oncological outcome.

Missions & objectives of ISOPES

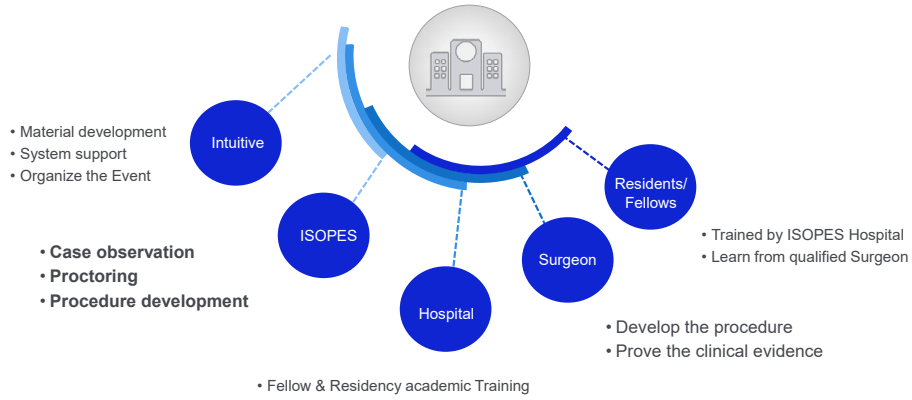
- ◆To advance the science and art of oncoplastic endocrine surgery
- ◆To maintain high standards in the practice and art of oncoplastic endocrine surgery
- ◆To provide a forum for scientific presentations and discussions
- ◆To encourage basic and clinical research in the field of oncoplastic endocrine surgery

- ISOPES has become more globalized, expanded academic interest in oncoplastic surgery.
- ISOPES shares our knowledge including all kind of techniques related to oncoplastic endocrine surgery

Credential program of ISOPES

ISOPES – INTUITIVE Korea MOU

ISOPES - Intuitive academic commitment to excellence



Robotic Surgery Credentialing in Thyroidectomy
The needs

The primary goal of credentialing is to improve patient protection and care. As robotic assisted thyroidectomy surgery get populated, systematic training program needs to be established.

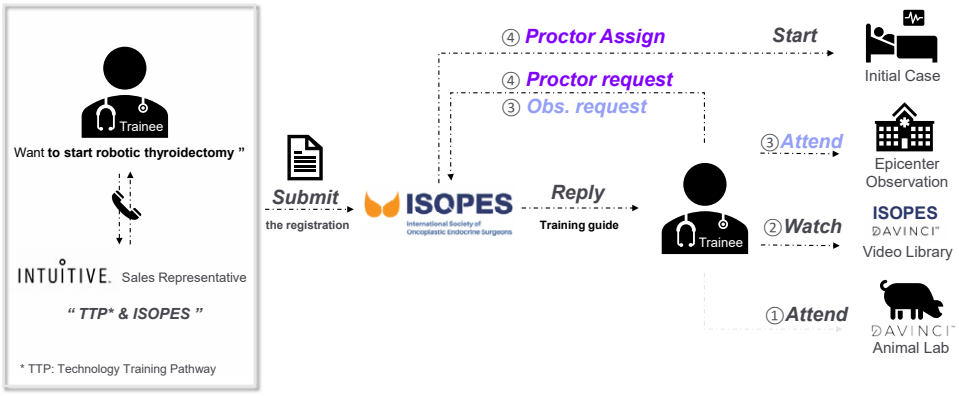
Basic product training program should be on the company but utilizing the system on surgery must be done by surgical Societies.

This program should be highly recommended to the members.

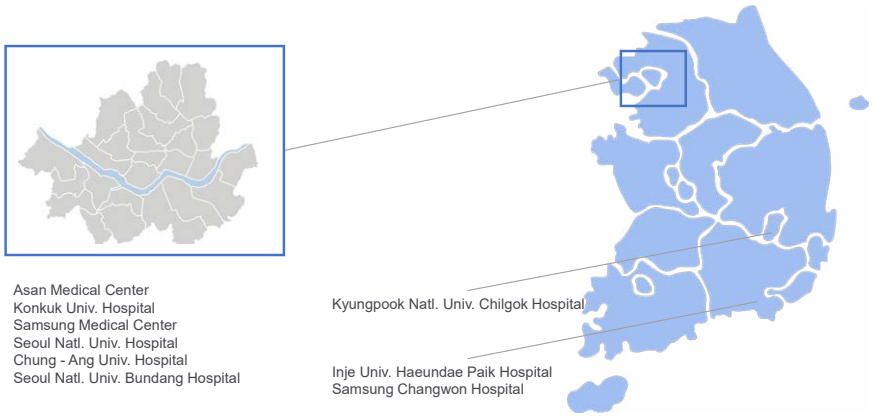
Robotic Surgery Credentialing in Thyroidectomy
The 3 components

	Before	After
Proctorship	• Individual approach • Very limited option - By the environment - By the process	• Arranged by ISOPES • Provide systematic program • Establishment of credentialing • Assigning Tutors with proper Criteria
Observation	• No regular observation week - not for international surgeons - Limited to Koreans	• Working together with Intuitive(Epicenter) • Noticed schedule in advance(International) • The Demand based schedule(Domestics)
Video Library	• No library - case by case	• Building up access tool to watch videos - By procedure step - By procedure types - By the level of difficulties

Perspective by a Trainee



Proctor and Case observation Sites Map, Thyroid



Asan Medical Center
Konkuk Univ. Hospital
Samsung Medical Center
Seoul Natl. Univ. Hospital
Chung - Ang Univ. Hospital
Seoul Natl. Univ. Bundang Hospital

Kyungpook Natl. Univ. Chilgok Hospital

Inje Univ. Haeundae Paik Hospital
Samsung Changwon Hospital

Video Library

The initiation

- ✓ Media materials from Basic(Flap dissection) to Advanced Surgery by procedure steps.
- ✓ Various examples as many as possible to educate surgeons including Intuitive’s official videos(Standard)
- ✓ The selection of Video is up to ISOPES committee, and the property belongs to the society.
- ✓ To initiate this project, suggest using Youtube tool at the beginning.
- ✓ After the assessment of benefits, decide whether to continue or not
- ✓ At first, complete BABA procedure videos and expand it to other techniques later.

YouTube ISOPES Channel

Providing the videos for surgeons who want to overcome learning curve by giving access to their accounts

Link

BABA standard

- Lobectomy — Left - EBSLN, Right - RLN
- Total — Big Tumor, Berry ligament
- MRND — Left, Right
- Complication

Link

Youtube Secret Channel

- Trainees : Less than 50 for volunteers (More than 50% seat for Korean)
- Turnover : 1 year valid access
- Q&A with Proctors

2021 ISOPES Symposium

International Society of Oncoplastic Endocrine Surgeons

June 12 (Sat)

Session 6

New trends in endocrine surgery

Chair

June Young Choi
Seoul National University

Do Hoon Koo
Inje University, Korea

CURRICULUM VITAE

Akira Miyauchi
Kuma Hospital
Japan

Dr. Miyauchi is President and COO of Kuma Hospital, Center for Excellence in Thyroid Care, Kobe, Japan. He is an endocrine surgeon, especially interested in thyroid and parathyroid diseases. He earned his MD and PhD at Osaka University Medical School in 1970 and 1978, respectively. He was Associate Professor of Department of Surgery, Kagawa Medical University until he was appointed to Vice President of Kuma Hospital in 1998. Since 2001, he is at his present position. Nearly 2,000 operations, including about 1,300 thyroid cancer cases, are done every year at Kuma Hospital. He is a Visiting Professor of Surgery, Nippon Medical School, Tokyo, Japan and Belgrade University, Belgrade, Serbia. He served as Chairman for the Asian Association of Endocrine Surgeons for 8 years until March 2020. He is serving as President for the International Association of Endocrine Surgeons from August 2019.

Session 6
New trends in endocrine surgery

Active surveillance for papillary thyroid microcarcinoma

Some of papillary microcarcinoma (PMC) may have aggressive features such as lymph node or distant metastasis, invasion to vital tissues, or aggressive cytology. These high-risk PMCs should be treated appropriately. However, vast majority are low-risk PMCs having none of the above features. Recent worldwide increase in thyroid cancer without increase in mortality is mostly due to increase in detection of small PTCs and PMCs. How we should manage patients with PMCs became a very big clinical issue. I will explain why I proposed active surveillance (AS) of low-risk PMCs in 1993, our approach of AS, and outcomes of the trial.

Main findings and outcomes: Very interestingly, unexpectedly, unlike clinical thyroid cancer, PMCs in patients under the age of 40 were more likely to show disease progression than in middle-aged or elderly patients. Comparing AS and immediate surgery (IS), oncological outcomes of these two management modalities were similarly excellent. However, the incidences of unfavorable events were definitely higher in the IS group than in the AS group, and the total cost of IS management over a 10-year period was 4.1 times the total cost of AS. Patients' point of view or emotional issues are important. Louise Davies conducted a questionnaire survey for patients on AS at Kuma Hospital. Very importantly, 83% of the patients replied that choosing

AS was the best decision for them personally, indicating they were satisfied with the management. Our study on QOL in patients with PMC showed the IS group had poorer scores at several issues than the AS group on Thyroid Cancer Specific Health Related QOL and Hospital Anxiety and Depression Scale. With these results, we can say, AS is much better than IS for the patients and also for the society. At Kuma Hospital, currently we recommend AS as the first-line management for the patients with low-risk PMC. Cancer Institute Hospital in Tokyo started AS from 1995. Their outcomes were quite similar to those at Kuma Hospital. With the promising results from these two institutes, the 2010JAES guidelines, 2015 ATA guidelines accepted AS and the 2018 JAES guidelines now actively recommend AS. Doubling time has major two limitations. To solve them, I proposed the doubling rate, which is the inverse of the doubling time. Using doubling rate, we were able to show the tumor volume kinetics of PMCs during AS. During AS, only 3% of the patients showed fairly rapid growth, 22% slow growth, 57% stable disease, and very interestingly 17% of the patients showed a decrease in tumor volume over time. I also report that the proportion of conversion surgery in AS has decreased dramatically over time, and that the rate of AS implementation at JAES institutions has increased. Finally, here are some tips to help patients choose how to manage their PMC.

MEMO

CURRICULUM VITAE

Murat özdemir

Ege University Hospital
Turkey

New trends in intraoperative neuromonitoring

CURRENT POSITION AND EXPIERENCE

2014 – 2020	Fellow in Endocrine Surgery and Staff General Surgeon,
2015 – 2015	Visiting Fellow in Endoscopic Thyroid / Parathyroid Surgery Halle University Halle, GERMANY
2017 – 2017	Visiting Yonsei University Gangnam Severance Hospital Thyroid Cancer Center Seoul National Univeristy Korean University
2020 –	Associate Professor in General Surgery

PROFESSIONAL AFFILIATIONS

Memeber, Turkish Society of Endocrine Surgery
Member, Turkish Society of Surgery

Session 6
New trends in endocrine surgery

New trends in intraoperative neuromonitoring

Despite the technical and technological advances in thyroid and parathyroid surgery, vocal cord paralysis due to recurrent laryngeal nerve (RLN) injury is still a significant complication. Although visual identification of the RLN remains the gold standard, intraoperative neuromonitoring (IONM) is helpful in the neural mapping of the RLN and EBLSN (external branch of the superior laryngeal nerve), evaluating their function, preventing nerve injury, and predicting postoperative vocal cord functions and voice outcomes. The IONM system has two sides: recording and stimulation sides. The most common IONM recording-side system detects the electromyographic (EMG) wave with a surface electrode placed on or integrated into the endotracheal tube. However, this method has some disadvantages, including a false-positive loss of signal (LOS) due to tube displacement, saliva accumulation, and changed tube location after manipulation by the anesthesiologist or surgeon. However, surgeons have searched for an alternative. Alternative methods such as transcartilage surface recording electrodes, thyroid cartilage surface needle electrodes and thyroid cartilage needle electrodes have begun to be used.

CURRICULUM VITAE

Wan Wook Kim

Kyungpook National University
Korea

EDUCATION

1994 – 2000	Medical Doctor, Soonchunhyang University, College of Medicine
2010 – 2012	Master's degree, Chungbuk National University, College of Medicine
2013 – 2019	Doctor's degree, Chungbuk National University, College of Medicine

CAREER

2000 – 2001	Intern, Samsung Medical Center, Sungkyunkwan University, school of Medicine
2001 – 2005	Resident, General Surgery, Samsung Medical Center, Sungkyunkwan University school of Medicine
2008 – 2010	Clinical Fellow, General Surgery, Breast & thyroid Service, Samsung Medical Center, Sungkyunkwan University, school of Medicine
2010 – 2011	Clinical professor, Breast & Thyroid Surgery Division, Department of Surgery, Kyungpook National University, school of Medicine
2011 – 2017	Assistant professor, Breast & Thyroid Surgery Division, Department of Surgery, Kyungpook National University, school of Medicine
2017 – 2018	Johns Hopkins Hospital, Research Fellow
2017 –	Associate professor, Breast & Thyroid Surgery Division, Department of Surgery, Kyungpook National University, school of Medicine

Session 6
New trends in endocrine surgery

Intraoperative parathyroid identification and viability assessment

It is possible to see important structures well beyond the limits of the surgeon's eyes so that the surgeon can safely operate and make critical decision-making accurately using image guided surgery.

In the thyroid surgery, image guided surgery has been studied for the parathyroid gland (PTG) and recurrent laryngeal nerve. Because PTGs are small and is embedded in the surrounding tissues such as lymph nodes and fat, it is often very hard for surgeons to identify PTGs. Especially during thyroidectomies, surgeons rely on visual inspection to localize PTGs, but this is highly subjective and often lead to damaging the PTGs. According to the literature, temporary hypothyroidism is 6.9-46%, permanent hypothyroidism is 0.5-6.6%, and unintentional removal of the PTG is 9.1-15%. To preserve the PTG well, the surgeon must be able to identify the PTG well, and preserve the vasculature to the PTG. Previously, there were studies to localize the PTG by near infra-red (NIR) fluorescence imaging after indocyanine green injection. However, there were still concerns using these fluorescent dyes - if the PTGs are devascularized, the dyes injected cannot reach PTG and highlight them for identification. Also, there is a chance of toxicity and it also requires multiple injections of dyes since it is difficult to evaluate 4 PTGs together and the dye is washed away almost immediately. In order to overcome these issues, in 2011, Paras et al. discovered the intrinsic fluorescent property in PTGs, and

reported that this is most likely due to calcium-sensing receptors in PTG cells. Ever since, NIR autofluorescence Imaging (NIRAF) has been a popular technique of identifying PTGs because there is no need to administer a dye and therefore allows for non-invasive, real time imaging method. However, although NIRAF is very effective in localizing the PTGs, NIRAF does not tell surgeons whether the PTGs are viable or not, because it still emits autofluorescent signals even though it is non-viable.

The our team developed a compact, portable hand-held imager that integrates NIRAF imaging and laser speckle contrast imaging (LSCI) to monitor the viability of PTGs intraoperatively through perfusion without dye. We could identify PTGs using NIRAF that were indistinguishable with standard color vision assessment. Digital angiography permits a continuous vasculature perfusion imaging and PTG tissue viability assessment. The blood flow through artery branches near the thyroid was observed in real-time and PTG perfusion was clearly differentiated between well- and poorly-perfused PTGs. We demonstrated the feasibility of the localization and digital angiography device for application in human clinical trials. In the future, this technology could be a robust tool for intraoperative PTG identification and viability assessment in head and neck surgery.

CURRICULUM VITAE

Raymon Grogan
Baylor College of Medicine
USA

I am an internationally recognized expert in endocrine surgery, innovator, educator, and translational scientist. As an innovator I am a world-renowned expert on Transoral Endocrine Surgery. In the last two years I have given more than 20 invited lectures in 7 countries on this topic. This includes grand rounds as prestigious institutions like Harvard where I was given an adjunct faculty position last year due to my expertise. I was the first surgeon in the Midwest (Chicago), first in Texas (Houston), and fourth in the United States to perform this procedure. I have developed the BCM Transoral program from the ground up into the first or second highest volume program in the country. I have two new novel Transoral surgical tools in development with a team of engineers at Texas A&M University. I have also developed assays for rapid PTH detection as well as thyroid cancer diagnosis. As a translational scientist I have national recognition. As Co-PI of the largest longitudinal cohort study on thyroid cancer survivorship I am recognized nationally as a leader in the field. I also developed one of the few validated tools to assess quality of life in thyroid cancer survivors. I am actively studying a connection between the microbiome and thyroid cancer, a very novel niche that very few researchers are pursuing at this time. My national reputation is evidenced in the many national guideline committees and publications that I am part of both within my specialty of endocrine surgery as well as in other specialties such as endocrinology, ENT, and urology. I have leadership roles in our national subspecialty group, the American Association of Endocrine Surgeons. As an educator I am actively involved in lecturing to medical students, am the director of research for non-research general surgery residents, and am co-site director for medical students on their surgical rotation at BSLMC. In addition to the above a run a full time endocrine surgery practice.

Session 6
New trends in endocrine surgery

Transoral parathyroid surgery

2021 ISOPES Symposium

International Society of Oncoplastic Endocrine Surgeons

June 12 (Sat)

Session 7

Various approaches for adrenal gland

Chair

Jung Han Kim
Sungkyunkwan University, Korea

Tae-yon Sung
Ulsan University, Korea

CURRICULUM VITAE

Young Jun Chai
Seoul National University
Korea

EDUCATION

1999 – 2003	M.D., School of Medicine, Seoul National University College of Medicine, Seoul, Korea
2012 – 2014	Master Degree, Graduate school, Seoul National University College of Medicine, Seoul, Korea
2015 – 2017	Ph.D., Graduate school, Seoul National University College of Medicine, Seoul, Korea

TRAINING

2003 – 2008	Internship & Resident Course, Department of Surgery, Seoul National University Hospital, Seoul, Korea
2012 – 2013	Clinical Fellow, Department of Surgery, Seoul National University Hospital, Seoul, Korea
2013 – 2014	Assistant Professor, Department of Surgery, Seoul National University Hospital, Seoul, Korea
2014 – 2019	Assistant Professor, Department of Surgery, Seoul National University Boramae Medical Center, Seoul, Korea
2019 –	Associate Professor, Department of Surgery, Seoul National University Boramae Medical Center, Seoul, Korea

Session 7
Various approaches for adrenal gland

Which is better? LTA vs PRA

Open transperitoneal adrenalectomy has been the gold standard of treatment for adrenal disease. According to the Nationwide Inpatient Sample, 83% of adrenalectomies from 1998 through 2006 were performed using the open method, despite laparoscopic adrenalectomy shown to be successful in 1992. As conventional open adrenalectomy offers a wide surgical view and operative field, it is still preferred to laparoscopic adrenalectomy for large tumors and malignancies. Laparoscopic adrenalectomy is not indicated for malignancy because it is associated with higher recurrence rates, although it could be performed safely in selected patients with isolated metastatic adrenal tumors. More recently, however, laparoscopic procedures have been shown to be advantageous, with minimally invasive adrenalectomy replacing open adrenalectomy. Minimally invasive adrenalectomy results in less blood loss, earlier ambulation, shorter hospital stay, and faster return to normal activity. These advantages were made possible by accumulated experience, advanced laparoscopic techniques, and better understanding of adrenal gland anatomy. At present, lateral transperitoneal adrenalectomy (LTA) has become the most widely utilized procedure for patients with benign adrenal disease. For LTA, the patient is placed in the lateral decubitus position with the affected side facing upward and the operative bed flexed just above the level of the iliac crest. The laparoscopic procedure was performed through a

transperitoneal approach. Three ports is required for the left side and four ports for the right side.

Since its introduction in 1995, posterior retroperitoneal adrenalectomy (PRA) has been utilized more frequently. This technique consists of approaching the adrenal gland directly through the retroperitoneal space, while not breaching the peritoneum, resulting in a shorter operative time, less blood loss, less postoperative pain, and shorter hospital stay than LTA. For PRA, the patient is intubated after anesthesia in a patient bed and then turned over from the bed onto the operating table. PRA was performed with the patient in the prone jackknife position with a moderately bent hip joint. Routinely, three holes were made along the lower tip of the 12th rib, and the operation is performed

Although several studies have compared the outcomes of LTA and PRA, their overall results are inconclusive. Each study was retrospective in design and was conducted in a single center with different inclusion criteria except one randomized controlled trial (RCT). In addition, several meta-analyses have compared transperitoneal with retroperitoneal adrenalectomy. These analyses, however, were not fully reliable, because the numbers of included studies and the study population were insufficient for meta-analyses. Therefore, we designed RCT comparing LTA and PRA, starting at 2012.

Before starting the RCT, we evaluated the previous surgical outcomes of LTA and PRA performed in Seoul National University Hospital (SNUH). In SNUH, A single surgeon performed LTA technique exclusively from September 2009 until December 2011. Then the surgeon adopted PRA in January 2012, and it has been performed exclusively until September 2012. The surgical outcomes of all patients who underwent LTA and PRA performed by the study surgeon were compared. Medical records of 29 LTA and 19 PRA patients were reviewed and there was no significant difference between the two

study groups in terms of gender, age, body mass index, antihypertensive medication history, preoperative blood pressure, preoperative heart rate, history of abdominal surgery, clinical diagnosis, tumor location, or tumor size. PRA was associated with shorter operation time, less blood loss, and lower intraoperative systolic BP. Pain score tended to be lower in the PRA group.

RCT compared 41 LTA and 41 PRA patients. We compared gender, age, body mass index, pre- and post-operative blood pressure status, gas out timing, pain score, intraoperative hemodynamic status, operation time, blood loss, postoperative pain score, analgesics use, hospital stay, and complications between the LTA and PRA group.

<Position for left LTA (A), and PRA (B)>

CURRICULUM VITAE

Tobias Carling
Carling Adrenal Center
USA

Dr. Tobias Carling is one of the world's leading experts in adrenal gland surgery. Dr. Carling performs more adrenal operations than any other surgeon in America. Dr. Carling left Yale University in 2020 to open the Carling Adrenal Center in Tampa, Florida.
Dr Carling is a fellow of the American College of Surgeons, and a significant member of both the American Association of Endocrine Surgeons (AAES) and the International Association of Endocrine Surgeons (IAES).
Dr. Carling spent 17.5 years at Yale University and the Yale University School of Medicine where he served as the Chief of Endocrine Surgery, Associate Professor of Surgery, Program Director of the Yale Endocrine Surgery Fellowship and the Founder & Director of the Yale Endocrine Neoplasia Laboratory, a supreme scientific program focused on the molecular pathogenesis of tumors arising in the adrenal, thyroid, and parathyroid glands.

The Carling Adrenal Center
Dr. Carling moved his world-renowned adrenal surgery program to Tampa, Florida in early 2020 to start the Carling Adrenal Center. Here, patients needing adrenal surgery have access to the best practices and best techniques the world has to offer. Dr. Carling has dedicated his entire career to the diagnosis and surgical treatment of adrenal gland tumors. He built the Yale University Adrenal Tumor Program into the preeminent adrenal tumor surgery center in the world where he performed more adrenal operation in a week than 97% of hospitals in the United States perform in a year.

Dr. Carling has published some of the most important scientific journal articles on adrenal tumors of our generation, improving the understanding of adrenal tumor growth, function and cure. Having focused his Ph.D. doctorate studies on molecular and tumor genetics of endocrine tumors, including inherited adrenal and other endocrine tumor susceptibility syndromes, Dr. Carling has published in the most prestigious medical/scientific journals, including Science, Nature Medicine, Nature Genetics, New England Journal of Medicine, PNAS, and Human Mo

CURRICULUM VITAE

lecular Genetics. According to Google Scholar calculations of scientific impact, Dr. Carling ranks within the highest–quality elite of the world. As a physician–leader, he implemented improved endocrine medical and surgical care, as well as enhanced cancer prevention and genetics programs across the Yale–New Haven Health Systems, and now brings this expertise to his own center in Florida.

Dr. Carling's Education. He obtained his MD and PhD from Uppsala University, Sweden. He came to the United States in 2000 for a prestigious postdoctoral fellowship in Cancer Genetics at The Burnham Institute, La Jolla, CA. He completed his training in both General Surgery and Endocrine Surgery at Yale–New Haven Hospital and Yale University School of Medicine, joining the faculty at Yale University in 2008. He became the Director of all Endocrine Surgery at Yale and the Director of the Endocrine Tumor Program for the Smilow Cancer Hospital and the Yale–New Haven Health Systems in 2013.

Session 7
Various approaches for adrenal gland

Various types of adrenal surgery and how to choose one

The Mini Back Scope Adrenalectomy (MBSA) or Posterior Retroperitoneoscopic Adrenal Operation (PRA) is the preferred operation for more than 95% of patients with adrenal tumors. There is less mobilization (i.e. dissection of surrounding structures). This leads to less risk of injury to surrounding structures such as the kidney, liver, spleen, pancreas, bowel or major vessels such as the inferior vena cava (IVC). The MBSA is much faster than any other technique. There is no value in a fast operation, per se. However, a fast operation means that your surgeon is skilled, experienced and confirms technical mastery. In Dr. Carling's hands the MBSA can be performed in 12-23 minutes in non-obese patients. The surgeon does not need to enter the intra-abdominal cavity when performing the operation, avoiding adhesions from previous operations. In addition, the MBSA patients have less pain, faster recovery, shorter length of stay and a superior cosmetic outcome.

Occasionally (<5%) an alternative approach to adrenalectomy is needed. The laparoscopic trans-abdominal adrenalectomy (LTA) with a hand-port is a surgical technique for adrenal tumors representing a hybrid between laparoscopic transabdominal adrenalectomy (LTA) and open standard trans-abdominal adrenalectomy. The positioning of the patient and approach is similar as the laparoscopic transabdominal adrenalectomy (LTA). This approach is appropriate for larger tu-

mors (>7-12 cm) and tumors which are suspected to be malignant, or very large, aggressive pheochromocytomas. Also, this approach may be used dependent on the patient's body habitus (especially obesity). Open trans-abdominal adrenalectomy may be employed for large adrenal tumors (>12 cm) and those adrenal tumors which are suspected or known to be malignant especially if the tumor is invading surrounding structures such as the kidney, liver, spleen, pancreas, bowel, or major vessels such as the inferior vena cava (IVC). In addition, an open approach is appropriate in remedial operations for pheochromocytomatosis, and metastatic retroperitoneal paragangliomas. Open thoraco-abdominal, open retroperitoneal, and robotic (Robot-Assisted) adrenalectomy approaches are not advocated.

CURRICULUM VITAE

Matrix Fung

The University of Hong Kong
Hong Kong

EDUCATION

2012 Bachelor of Medicine and Bachelor of Surgery (MBBS), University of Hong Kong

PRESENTATIONS IN INTERNATIONAL CONFERENCES

1. Invited speaker for RCSEd/CSHK Conjoint Scientific Congress 2020 - Use of routine intra-operative nerve monitoring in endocrine surgery
2. Oral podium presentation, American Association of Endocrine Surgeons 2021 Annual Meeting – Intra-operative laryngeal ultrasound for recurrent laryngeal nerve monitoring during thyroid and neck surgery
3. Oral presentation, American Association of Endocrine Surgeons 2021 Annual Meeting - A prospective study comparing the midline and lateral trans-laryngeal ultrasound approaches in the assessment of vocal cords before and after thyroid and neck surgeries
4. Outstanding Oral Presentation - The 2nd Congress of Asian Surgical Ultrasound Society 2019 - Feasibility and accuracy of very early post-operative translaryngeal ultrasound in neck surgery
5. Oral podium presentation, American Association of Endocrine Surgeons 2020 Annual Meeting - A prospective study evaluating the feasibility and accuracy of very early postoperative translaryngeal ultrasonography in the assessment of vocal cord function after neck surgery.
6. Oral podium presentation, American Association of Endocrine Surgeons 2020 Annual Meeting - Third-generation intraoperative parathyroid hormone (IOPTH) assay might be better than the second-generation assay in parathyroidectomy for primary hyperparathyroidism.

Session 7
Various approaches for adrenal gland

Management of bilateral pheochromocytoma in MEN2A patients

Phaeochromocytoma (PHEO) is common among patients with multiple endocrine neoplasia type 2A (MEN2A). The penetrance of PHEO increases with age and varies with the type of mutation. Interestingly, the risk of bilateral PHEO is much higher in MEN2A patients (>30%) than in patients with sporadic PHEO. This poses a unique challenge to the management and monitoring of PHEO in MEN2A. Upon the biochemical confirmation of elevated catecholamines, careful evaluation of both adrenal glands is necessary to search for bilateral disease. Apart from axial anatomical imaging, functional imaging such as 68-Ga-DOTATATE positron emission tomography (PET) or I-meta-iodo-benzyl-guanetidine (MIBG) scintigraphy are often helpful. In the presence of bilateral disease, the surgical dilemma lies on the choice of bilateral total adrenalectomy versus partial/cortical sparing adrenalectomy (CsA). Bilateral total adrenalectomy renders the patient dependent on life-long steroid replacement and also at risk of Addisonian crisis. CsA carries the risk of recurrence in the adrenal remnant. The current trend in the literature seem to favour CsA more, due to the low rate of malignancy/metastases, acceptable rate of recurrence, availability of treatment for recurrence and the morbidity associated with lifelong steroid replacement for its counterpart. Nevertheless, careful case selection is required for a successful cortical sparing procedure, in which a 20 to 50% of remnant volume have

been reported to be required to preserve adequate adrenal function. There are increasing reports on the use of indocyanine green fluorescence imaging for the intra-operative localization of PHEO, guidance of the transection plane and evaluation of remnant vascularity.

CURRICULUM VITAE

Yu-Mi Lee
Ulsan University
Korea

EDUCATION

M.D. Degree, College of Medicine, Youngnam University, Daegu, Korea
M.S. Degree, Graduate School, Ulsan University, Seoul, Korea
Ph.D. Degree, Graduate School, Ulsan University, Seoul, Korea

2004	Internship, Asan Medical center, Ulsan University College of Medicine, Seoul, Korea
2005 – 2008	Residency, Department of Surgery, Asan Medical center, Ulsan University College of Medicine, Seoul, Korea
2009 – 2012	Fellowship, Division of Breast and Endocrine Surgery, Department of Surgery, Asan Medical Center, Ulsan University College of Medicine, Seoul, Korea

CAREER

2013 – 2019	Clinical Assistant Professor, Division of Endocrine Surgery, Department of Surgery, Asan Medical Center, Ulsan University College of Medicine, Seoul, Korea
2020 –	Associate Professor, Division of Endocrine Surgery, Department of Surgery, Asan Medical Center, Ulsan University College of Medicine, Seoul, Korea

Session 7
Various approaches for adrenal gland

Laparoscopic vs. Robotic adrenalectomy

[Laparoscopic adrenalectomy]

Laparoscopic adrenalectomy, first reported by Gagner in 1992, has been shown to have several advantages in efficacy and safety compared to laparotomy. Laparoscopic surgery has the advantage of reducing the number of days of stay compared to traditional open surgery, making patients feel more comfortable, and speeding their return to daily life, including normal bowel function and physical activity.

Laparoscopic adrenalectomy can be safely performed by an experienced surgeon, even for benign tumors less than 8-10 cm in size and small single adrenal metastasis. Although many surgeons are skeptical about laparoscopic surgery for primary malignant tumors in the adrenal glands, a tumor may be safely resected without seeding or breaking the capsule when there is no evidence of adjacent tissue invasion or lymph node metastasis.

Laparoscopic surgery can be divided into two groups: transabdominal approach in which the adrenal gland is excised through the abdominal cavity, and retroperitoneal approach through the peritoneal cavity rather than the abdominal cavity. Depending on the position of the patient, each can be subdivided into lateral, supine and prone approaches. Among these, the transperitoneal approach with lateral position and retroperitoneal approach with the prone position are used most commonly in these days.

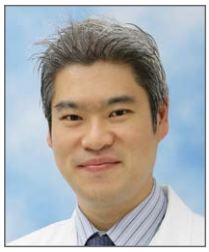
[Robot-assisted adrenalectomy]

After introducing the da Vinci surgical robot system in the early 2000s, it has been used in many surgical areas. Several studies comparing laparoscopic adrenal resection with robotic adrenal resection have been published since Horgan and Vanuno first introduced robotic adrenal resection for benign tumors in 2001.

The most significant advantage of robotic adrenal surgery is overcome of the limitations of conventional laparoscopic surgery, which are the limitation of endoscope vision without a perspective view and of rigid straight instruments. Robotic system has a 3D camera with magnified images and advanced surgical instruments with multi-joints. Taking these advantages, robotic surgery could be an alternative option for patients who had a tumor located in a difficult place to access through laparoscopy surgery. In addition, single-site surgery is easier to apply in robotic system, and it is possible to advance the development of minimally invasive surgery in adrenal surgery.

However, laparoscopic surgery is already well established in adrenal surgery, and the advantages of robotic surgery are not overwhelming. Therefore, there is still controversy about robotic adrenalectomy

CURRICULUM VITAE



Sang-Wook Kang
Yonsei University
Korea

Retroperitoneal approach for paraganglioma

EDUCATION

2000	M.D. Degree, Yonsei University College of Medicine, Seoul, Korea
2005	M.S. Degree, The Graduate School, Yonsei University, Seoul, Korea

SURGICAL TRAINING

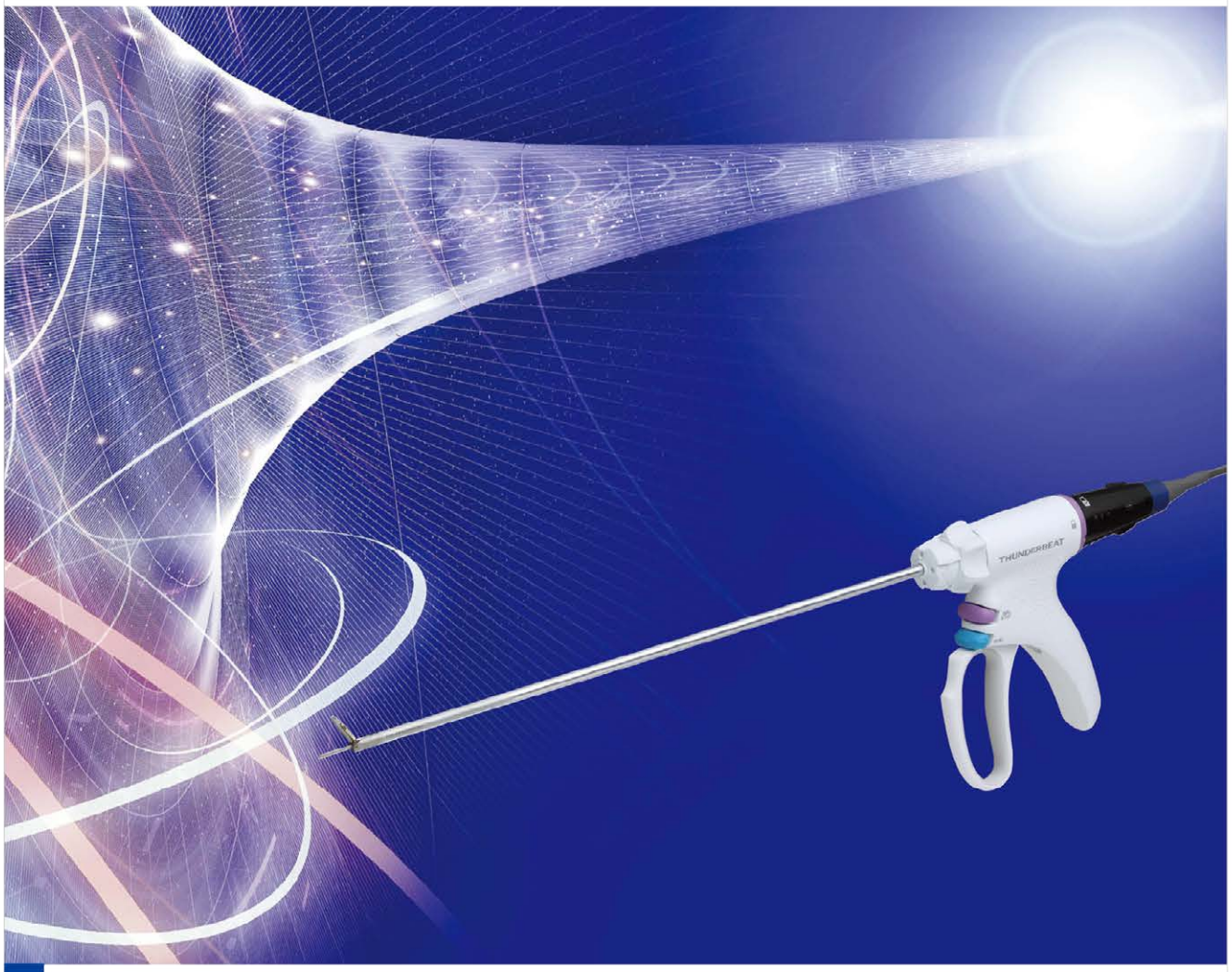
2000 – 2001	Internship, Rotating internship, Inchon Christian Hospital, Seoul, Korea
2001 – 2005	Residency, Department of Surgery, Yonsei University College of Medicine, Seoul, Korea
2008 – 2010	Fellowship, Thyroid Cancer Clinic, Endocrine Division, Department of Surgery, Yonsei University College of Medicine, Seoul, Korea,
2015 – 2017	Clinical fellowship Department of Surgery-oncology, Tulane University School of Medicine, New Orleans, USA
2010 – 2019	Assistant Professor, Thyroid Cancer Clinic, Endocrine Division, Department of Surgery, Yonsei University College of Medicine, Seoul, Korea
2020 –	Associate Professor, Thyroid Cancer Clinic, Endocrine Division, Department of Surgery, Yonsei University College of Medicine, Seoul, Korea

Session 7
Various approaches for adrenal gland

Retroperitoneal approach for paraganglioma

OLYMPUS®

Your Vision, Our Future



THE WORLD'S FIRST FULLY-INTEGRATED BIPOLAR & ULTRASONIC TECHNOLOGY

Rapid cutting and reliable 7 mm vessel sealing from a single surgical instrument.

The benefits of both advanced bipolar and ultrasonic energies to provide unprecedented versatility:

- Reliable 7 mm vessel sealing
- Minimal thermal spread
- Fastest-in-class cutting
- Reduced mist generation for improved visibility
- Precise dissection with fine jaw design
- Fewer instrument exchanges

THUNDERBEAT

Hanmi 한미헬스케어

Guardix

Anti - Adhesion

가딕스는 수술 부위에 도포하여 주변 조직에 일시적인 윤활성 코팅을 제공하고 유착을 감소시키기 위해 사용하는 유착방지제입니다. 가딕스는 국내 최초 오리지널 유착방지제로서 다수의 국내 임상 결과를 통해 안전성 및 유효성이 입증된 제품입니다.

SOL Solution 1.5g · 5g · 10g

탁월한 유착방지 효과 / 급여 가능

SG Solution / Gel 3g · 6g

세계최초 온도감응성 유착방지제 / 급여 가능

CSL Behring

SK plasma

Beriplast® P start again With SK Plasma

The Seal of Success

베리플라스트®-피 콤비세트는 1mL와 3mL가 있습니다.(전체용량 2cc, 6cc)[1]

Beriplast® P Combi-Set

전문의약품 분류번호 : 634

제품요약정보

【제품명】 베리플라스트®-피 콤비세트1mL, 3mL【원료약품 및 그 분량】

	조성(주성분)	1mL세트	3mL세트
바이알1	사람피브리노겐(별규) / 사람혈장 혈액응고인자 XIII(별규)	90mg / 60IU	270mg / 180IU
바이알2	아프로티닌 용액(E.P)(아프로티닌으로서)	1,000KIU*(=0.56PEU**)	3,000KIU*(=1.67PEU**)
바이알3	사람트롬빈(별규)	500IU	1,500IU
바이알4	염화칼슘(E.P)	5.9mg	17.7mg

*KIU = Kallikrein (kininogen) Inactivator Unit / **1 PEU (Ph.Eur Unit) = 1800KIU

【효능 · 효과】기존 치료법으로 조절할 수 없는 경우 또는 기존 치료법으로 불충한 경우 모든 수술 분야(일반외과, 심장외과, 흉부외과, 소아외과, 신경외과, 정형외과, 성형외과, 외상, 산부인과, 비뇨기과, 이비인후과, 치과 및 구강외과, 안과의 수술 등)에서의 보조 : 조직접착, 봉합, 국소지혈 **【용법 · 용량】 1. 용량** 용량은 적용할 상처표면의 면적 또는 채워야 할 결손부위에 따라 결정하나, 보통 접착이 필요한 조직의 표면적에 따라 다음과 같이 사용한다. 8 ㎠까지: 이 약 세트 1mL 24 ㎠까지: 이 약 세트 3mL **(용법 생략)【저장방법】** 밀봉용기, 냉장보관(2-8℃), 얼리지 말 것. 차광을 위해 외부 상자를 유지한 상태로 보관

2017. 9. 16. 개정

※ 처방하기 전 제품설명서 전문을 참고하십시오. 최신 허가사항에 대한 정보는 '온라인의약도서관(http://drug.mfds.go.kr)'에서 확인할 수 있습니다.

Reference 1. 베리플라스트피콤비세트 허가사항. 온라인의약도서관(Cited 2017.10.18)

BRP-HA01-201711-01

SK 플라즈마 경기도 성남시 분당구 판교로 310(삼평동) www.skplasma.com 제품문의 080-969-9967


ISOPES
International Society of
Oncoplastic Endocrine Surgeons